FIRE ENGINEERING

A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

FEBRUARY 25, 1926

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FABRIC FIRE HOSE

The hose with the Separable Rubber Inner Tube. Fabric is the Wax and Para Gum Treated Cotton Rubber Lined Hose that has made such an enviable reputation in Fire Department service.

In the next issue of FIRE ENGINEERING we will tell you some of the interesting details in the manufacture of Fabric Fire Hose. Watch for it.

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Are You Safely Prepared For Your Next Oil Fire?

Foam, of course, is the best extinguishing agent. But to get the best foam in the practical form and in the dependable quantities necessary for effective "fool proof" fire fighting is possible only with the new

AMDYCO

Showing the Amdyco Foam Generator in operation. Water comes in one line (under regular pumper or hydrant pressure) mixes with the Amdyco Foam Powder that is fed into the hopper as demonstrated above, and goes out the other line as a foam stream.

FOAM POWDER

used with the New Amdyco

FOAM GENERATOR

EXHAUSTIVE tests and actual performance at fires, particularly the Everett, Mass., oil fire Jan. 25th where Amdyco saved the day, have proven conclusively the superiority of the Amdyco method. What particularly appeals to fire officials who are concerned with the ever-increasing problem of fighting oil, gasoline and other flammable liquid fires, is the practical utility of the Amdyco Foam equipment in fire department work, the speed with which it can be put into operation, its remarkable simplicity, its low cost.

When you need foam at a fire, with the Amdyco method all you have to do is shut the water off in one of your hose lines, uncouple at any convenient point, and then hook up the portable Amdyco generator (just as easy as adding another length of hose). The water passing through mixes with the single Amdyco Foam Powder which is fed into the generator, producing a continuous foam stream ready to meet any condition. It does away with the necessity of carrying bulky "prepared" solutions, and requires no special hose, tanks or other equipment.

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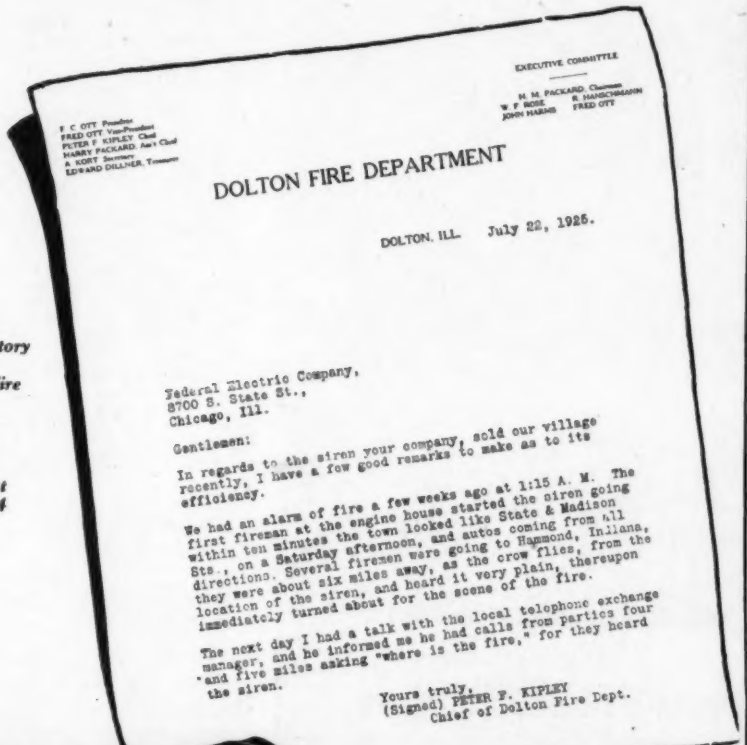
Better Foam in Better Form

100 E. 42nd St. New York

"Heard 6 miles at 1.15 A.M."



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DOLTON FIRE DEPARTMENT

DOLTON, ILL. July 22, 1925.

Federal Electric Company,
8700 S. State St.,
Chicago, Ill.

Gentlemen:

In regards to the siren your company sold our village recently, I have a few good remarks to make as to its efficiency.

We had an alarm of fire a few weeks ago at 1:15 A. M. The first fireman at the engine house started the siren going within ten minutes the town looked like State & Madison Sts., on a Saturday afternoon, and autos coming from all directions. Several firemen were going to Hammond, Indiana, they were about six miles away, as the crow flies, from the location of the siren, and heard it very plain, thereupon immediately turned about for the scene of the fire.

The next day I had a talk with the local telephone exchange manager, and he informed me he had calls from parties four and five miles asking "where is the fire," for they heard the siren.

Yours truly,
(Signed) PETER F. KIPLEY
Chief of Dolton Fire Dept.

Approved by the Underwriters' Laboratory of the National Board of Fire Underwriters

Approval dated October 11, 1918

Code control patent allowed April, 1924

Federal Electric Siren

It gets instant attention day or night—always heard—always recognized. Its weird cry gets your men on the job quickly, when seconds count—pays for itself many times in keeping down fire loss and insurance rates.

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Name ..... *Official Position* .....

Street and Number ..... *City* ..... *State* .....

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FE-2

The Journal of the Fire Protection Profession Since 1877

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FIRE ENGINEERING

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Even the Stiff Shirts!

PALM BEACH society, according to the daily papers, has taken up fire fighting.

¶ Social leaders, prominent athletes and movie celebrities will no doubt add a bit of tone to the department, and no harm will be done if the experienced back-bone of the fire fighting profession continues on the job.

¶ Chief Schultz of Palm Beach is to be congratulated upon the Ritzy crew he has working with him, as described in the news item on page 190 of this issue—and we hope they'll make good. They can if they will!

¶ Even stiff shirts and high hats can contribute their part—and here's a tip for Chief Schultz and any other department head who wants to get top-notch efficiency out of his men: get them all to become regular readers of FIRE ENGINEERING! And we don't mean maybe!

The Publishers

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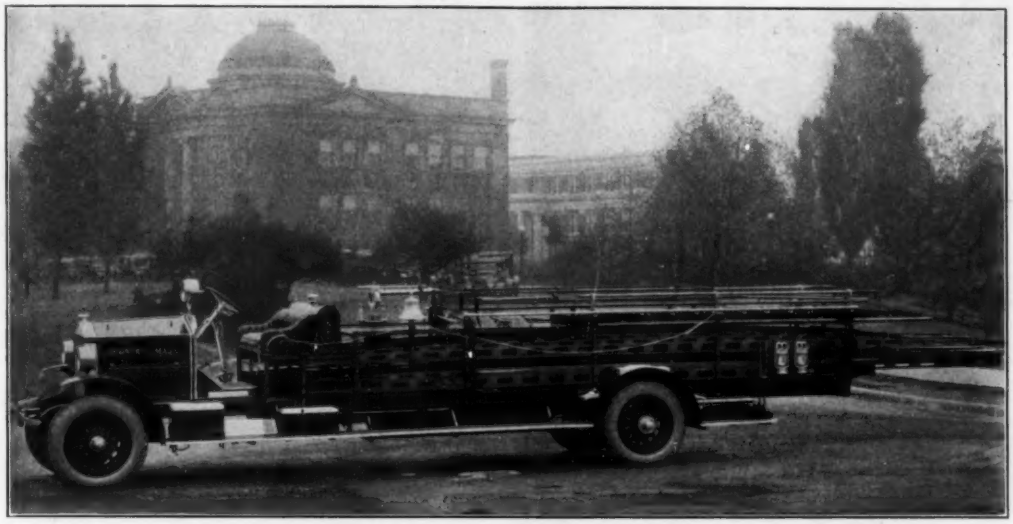

Ahrens-Fox Ladder Trucks

Embody the Latest Improvements in Modern Fire Apparatus Construction

BEFORE you decide on new city service or Aerial Ladder Truck equipment for your department, you should in fairness to yourself and to your city get all the facts about Ahrens-Fox apparatus.

Just consider a few of the features of the above pictured Double Bank City Service Truck protecting life and property at Braintree, Mass. Powered with a specially designed and constructed Ahrens-Fox fire apparatus motor. Heat treated pressed steel frame. Double reduction shaft drive (rear axle). Top ladder level with driver's seat. Side step extended in the rear.

For a combination of efficiency, compactness, convenience and completeness—plus guaranteed serviceability—we believe it impossible to beat this typically superior Ahrens-Fox job.

It was Ahrens-Fox apparatus that years ago made famous the slogan: "Nothing is too good for fire service, and nothing but the best will do." Nothing but the best is good enough for your department, and if you haven't on file all the latest Ahrens-Fox literature, we suggest that you drop us a line at once.

"Nothing is too good for fire service,
and nothing but the best will do."—Ahrens-Fox

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"Builders of Quality Fire Apparatus"

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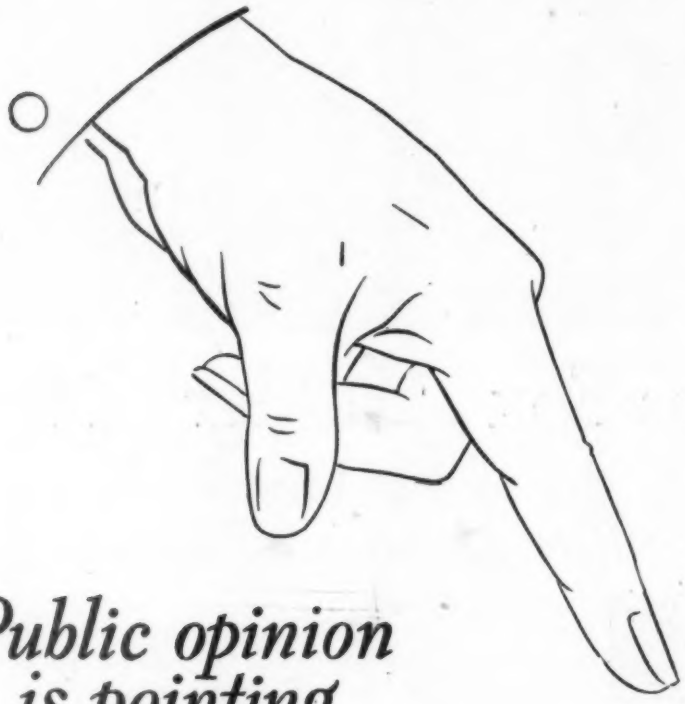

Public opinion is pointing –towards FIRESAFE roofs

PEOPLE no longer buy a roof as casually as they used to. Greater and greater grows their demand for fire-safety and as it grows, the use of asbestos shingles increases.

This is a big step toward the fire-safe community of the future.

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FIRE PROTECTION PRODUCTS

Fire officials in cities everywhere are finding A. D. T. cooperation an invaluable aid in their work.

Over $20,000,000,000 worth of property throughout the country is protected by A. D. T. Services.

A. D. T. provides a nation-wide service for better protection against fire loss and water damage.

Every municipal and industrial fire protection official should know the facts about A. D. T. service.

You, Too, Can Perhaps Use A. D. T. Services To Cut Down Fire Loss and Water Damage

In this day of modern fire prevention and protection methods you fire officials realize without exception the vital importance of automatic sprinkler equipment in large buildings everywhere — and you, therefore, insist upon sprinkler installation.

Now, what we do is use our offices in cities throughout the country with their electrical and messenger service facilities to supplement, strengthen, and complete the protection provided by this universally used sprinkler equipment.

Thru these offices we provide a service that can be divided into two classes, as follows: First, sprinkler supervision with a constant day and night check-up on every vital part of the sprinkler equipment in their territory and instant detection of a dangerous risk or a blaze. Second, a watchman supervisory service that gives needed warning of the failure of a watchman to make his rounds because of death, accident, illness, robbery, or other cause.

This service is provided as a form of cooperation with local fire department officials, usually at their suggestion and invariably with their recommendation, is approved by the National Board of Fire Underwriters, and it is our desire to work in closest harmony with all fire officials for the common good.

May we send Complete Information?

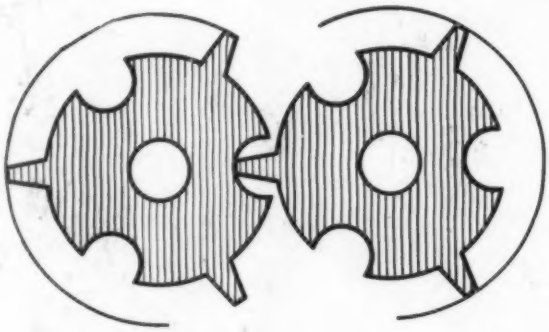
CONTROLLED COMPANIES

American District Telegraph Co.

Executive Offices, 183 Varick St.

New York City

The Ideal Fire Pump



IN the "Waterous" Rotary Pump are incorporated many features that place it in a class by itself.

The basic reason for the remarkable performance of the "Waterous" is its patented rotor, and around this NEW idea has been developed the ideal fire pump.

Freedom from vibration, absence of noise, long wearing qualities, simplicity and compactness, accessibility, high efficiency and great capacity per pound of pump weight, are a few of the many desirable features found on the "Waterous."

You will not know the full measure of pump satisfaction until you own a "Waterous."

We will be glad to furnish you with complete information.

WATEROUS FIRE ENGINE WORKS
INCORPORATED

Also Manufacturers of the "Waterous" Compression Fire Hydrant

Saint Paul, Minnesota

Established Waterous Dependable 1886

ROTARY PUMP

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Leading Journal of the Fire Protection Profession

VOLUME LXXIX FEBRUARY 25, 1926 NUMBER 4

Some Pointers on Handling the Injured at Fires

Danger in Moving of Victims by Uninstructed Persons—Proper Way of Lifting Patient—Lowering from Height—Raising from Trench

By CHARLES W. GEIGER, San Francisco, Cal.

THE following is from a lecture delivered by Mr. Saunders before the company officers and the 1,600 uniformed men of the San Francisco Fire Department, on Rescue Work. The instruction course took three weeks to complete and the lecture was amplified by practical demonstrations, as shown in the illustrations:

In rescue work, fire casualties and accident cases can be divided as follows: First, the members of the fire department who become injured in line of duty; second, the citizen victim the fire department is called upon to rescue and aid.

Unskilled Lifting of Injured Persons

To quote Doctor Alanson Weeks, chief surgeon, San Francisco Emergency Hospitals, "Fractures have 90% less chance of healing satisfactorily after the victim has been lifted about by unskilled persons."

Doctor J. C. Egbert, surgeon of the Harbor Emergency Hospital, San Francisco, says, "Moving persons with dislocated backs, injured spines or broken legs or upper arms is dangerous. The sharp broken bone may tear into muscles and instead of six or eight weeks to heal a clean break a man may be laid up for months, be crippled for life or even lose his leg."

The American Red Cross' physician instructors in first aid, emphatically teach that a victim should be let lie until the arrival of skilled attendants; that they should be taken to hospitals in an ambulance, which has the right of way over traffic and is a speedy conveyance equipped for the proper handling of victims and patients; that under no circumstances, unless absolutely imperative, should an injured person be taken to a hospital in touring cars or trucks offered for that purpose, and that the initial pick up or first lifting of the victim should be made in a proper manner.

Aside from yourselves, who may at any time be pinned beneath wreckage, fallen walls and buildings, excavation cave-ins, be struck by an automobile, suffer the results of collisions with other vehicles which failed to give your apparatus clear way, or have a bad fall, etc., there is the citizen victim who suffers all the above, also, and whom you are called upon to aid. The public expects you to render aid efficiently and we know you want to do it efficiently.

Incident Illustrating Danger of Unskilled Lifting

I am going to tell of an actual incident that happened in San Francisco and which will show the danger of faulty knowledge and its results. Recently a woman, struck down by an automobile in Golden Gate Park, driven by a hit-an-run driver, was found in the roadway by a policeman, who incidentally, happened to be driving a Ford.

Naturally the policeman s first thought was to render aid. The victim was unconscious. His next thought was to get her to a hospital. All very good up to the present. From this time on his good intentions failed in their purpose and the pity of it is that it was all intended for the best.

Well, having a Ford he thought he would use it as an ambulance. He couldn't see any particular damage or broken bones, no bleeding, so according to all the evidence she was only unconscious. He picked her up as best he could and placed her in his Ford and drove to St. Luke's Hospital.

Aggravation of Original Injuries

On examination the physicians found her initial or original injury was, both pelvis bones broken. Injuries due to complications caused by inefficient initial pick up and jouncing about in a Ford while riding to hospital as follows:

Pelvis bones pitched forward tearing her intestines, which were caught in the fractures and chopped up by the jouncing and bladder ruptured. In other words the good hearted and zealous policeman caused more damage and injury than the criminal autoist.

Therefore, when you come upon a victim render first aid, send for an ambulance and pick him up in the manner as instructed. Overzealousness and a desire to help the injured often proves more dangerous than criminal indifference and carelessness.

Untrained "Good Samaritan" a Dangerous Factor

Everybody is interested in saving human life. Witness the effort and expense put forth to save Floyd Collins, one man,

Fig. 1 (Left) Improper Method of Making an Initial Pick Up. Fig. 2 (Center) Placing Victim on Stretcher. Fig. 3 (Right) Method of Carrying Victim.

Fig. 4 (Upper) Making a Very Short Turn on a Stairway. Fig. 5 (Center) Picking Up Victim from Trench. Fig. 9 (Lower) Victim in Sitting Position.

and again the effort to rescue the few miners entombed in the Argonaut mine. Even after there was no hope that any of them would be alive.

The complexity of our modern industries and their mechanical equipment and the increase of traffic, together with life saving campaigns, demands more efficient and humane treatment of victims and patients.

The handling, equipment, devices and appliances are of vital importance for they relieve and aid the victim, in that they are applied to and used on him.

More often than the layman realizes, patients with dislocated backs, injured spines, broken legs and arms who are unskillfully and clumsily handled, may be crippled for life or lose their legs. Red Cross statistics prove that the untrained "Good Samaritan" is a dangerous factor when he attempts to aid the injured.

The old method of picking up and transferring injured persons onto a rigid litter during the initial pick-up caused broken bones to tear into muscles, producing compound fractures and severe complications, resulting in more permanent disabilities and fatalities than the initial injuries.

Therefore the purpose of a flexible stretcher as shown in the illustration is to provide for easy, simple, efficient, safe and humane handling and transfer of patients, no matter how complicated the injury, delicate the operation or post-operative case may be. It closes the gap between all transfers from the initial pick-up and lifting to the final disposition of the patient.

With the stretcher illustrated patients are lifted and transferred from the ground, rigid litter, Bomgardner chair cot, operating table, Gurney hospital wheeled litter, bed, convalescent wheeled chair, steamer chair, lounge, bath tub toilet or ambulance litter, in either a reclining or sitting position.

The flexible character of this stretcher enables it to conform to the patient's body, providing a support at all points thereby relieving muscular strain and pain, dispensing with temporary slings, splints and bandages.

It adjusts itself to short turns on stairs, landings, halls, companionways and staterooms, through regular passenger entrance of Pullman cars, into berths, compartments and over gangways. Patients may be slung in the stretcher over a ship's side and ride in sitting position in an automobile, when convalescing, or railroad train when well enough to stand a trip.

It is invaluable in removing victims from tanks, wreckage, excavations, gas mains, sewer trenches and shipholds. In fact it replaces the rigid litter in all difficult and inaccessible places, and adds all it's own special features when the occasion demands and a situation is unusual.

Each Fire Truck of the San Francisco Fire Department carries two of these stretchers and each squad wagon carries four as these are the only types of fire apparatus called upon for rescue work.

* * *

As the lecture was given by Mr. Saunders, he showed the actual application and use of the stretcher as applied to actual rescue work. Firemen were called upon to relate their experiences with peculiar or extraordinary cases where victims were found in difficult situations and locations, for instance at the foot of a light well, in a man hole or similar situation. Mr. Saunders then actually demonstrated how he would get people out of all conceivable positions or unusual physical jams.

Descriptions of the Illustrations

In the accompanying illustrations, Fig. 1, shows the initial pick-up as done improperly and Fig. 2 shows the initial pick-up

(*Continued on page* 210)

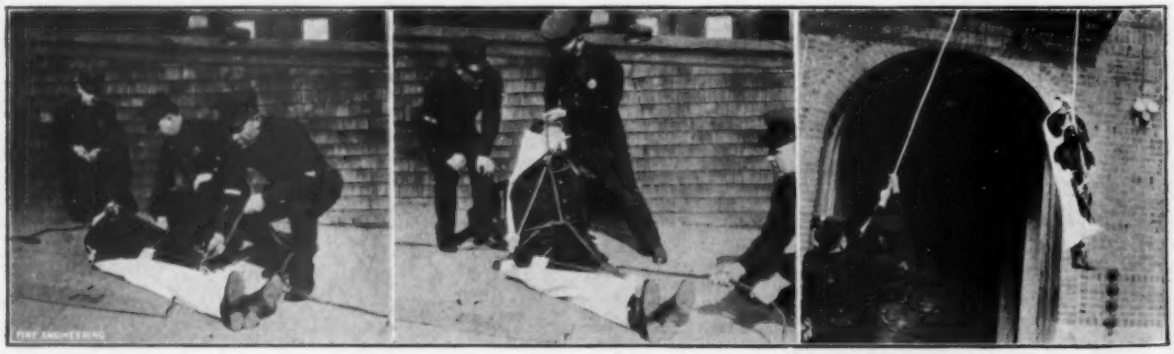


Fig. 6 (Left) Tying Victim Into Stretcher for Lowering from Some Elevated Position. Fig. 7 (Center) Victim in Sitting Position Tied in and Ready to be Lowered. Fig. 8 (Right) Lowering Victim from Tower

Fireproof Skyscraper Stands Severe Test

Fire Enters Through Open Doors, but Is Held from Extension by Fire Walls—Contents in Section of One Floor Destroyed

By WM. JEROME DALY

NEW YORK received the surprise of its firemanic life early on Tuesday morning, February 16th.

The surprise was a fourth alarm fire in the Equitable Building, one of the city's most modern and fireproof skyscrapers, built on the site of the ruins of the memorable Equitable Building fire of January, 1912, in the square block bounded by Broadway, Pine, Cedar and Nassau Streets, in the heart of the financial center of the world. It is in the High Pressure district.

Demonstrating How Rescues Were Made on Top of Equitable Tower.

But it was a different Equitable Building that Chief Kenlon and his men tackled on that frigid January morning fourteen years ago. The difference was in design and material. The old Equitable was a total loss with a still greater loss of six lives. The new Equitable held the fire within the automatic enclosed area which comprised the southwest wing of the building on the 35th floor, without any loss of human life.

The fire was unusual in its unforeseen possibilities. It produced a problem and a result that had never been anticipated, in that type of structure at least.

The spread of the fire was due to negligence on the part of somebody who in either entering or leaving the shaft at the 11th and the 35th floors, failed to close behind them the shaft doors. It was through these open doors, the fire left the shaft and gave the firemen a task they had never anticipated.

The Equitable Building is the property of the Equitable Life Assurance Society. It is of steel and granite, 167 x 312 feet in size, with approximately 300 persons per floor, 486 feet high, containing thirty-eight stories in the main building and three additional stories of about 75 x 100 in size, making a pent house. The structure is valued at $30,000,000.

It is tenanted mainly by corporations in the banking and financial, industrial and commercial world. Some of this country's most noted lawyers have offices there.

It has a day and night fire brigade. The night brigade consists of eleven men—a captain, lieutenant and nine firemen—all retired and pensioned members of the New York Fire Department. The day force of fire guards is not as large as the night force. The night force is in charge of Capt. Michael Judge who was a member of the N. Y. F. D. for twenty-seven years. He retired in 1914 as Captain of Engine Co. 205 in Brooklyn.

The fire had its origin in a pipe shaft, 12 x 12 feet which extends the entire height of the structure, from an opening in the subcellar to the roof of the pent house. In this shaftway are many pipes carrying steam, brine, gas, sewage, fresh water and one in particular—a six inch line, is a water pipe used to pump water to the tanks in the pent house.

On Monday, February 15th, the tank supply pipe became loosened from the wall shaft at about the third floor. Sections of it became disjointed or dislodged, leaked badly and caused the building management to summon emergency repair men other than the regular force of building employees.

This pipe shaft is located where indicated [A] on the accompanying sketch. At every fifth floor in this shaft there is a metal covered door leading out of the shaft from the level of an iron-grill working platform. These platforms may be reached wholly within the shaft on a perpendicular iron ladder, extending the entire length of the shaftway.

The emergency crews were working all night, supplied with portable electric trouble lamps, connected to outlets at convenient distances in the shaft. This was the only electric line in the shaft and it was carried in metal conduit all the way.

From testimony taken by Chief Fire Marshal Thomas P. Brophy, Deputy Chief Fire Marshal John P. Prial, Assistant Fire Marshals William Copeland and William Jockel, it is evident that a short circuit occurred in one of the portable trouble lamp lines in the hand of a plumber working at about the third floor. The "short" occurred in the line eight feet back from the lamp socket. When this happened two plumbers and two plumbers' helpers were at work at the third floor. Five other workmen were at work on the defective pipe line near the top of the building.

The short circuit "blew" the light and ignited some of the unpacked packing which had been taken off the pipe and left in a pile on the third floor grill platform. The young plumbers' helper shouted: "there's a flash" and he climbed down the shaft ladder to the basement or cellar and told the night engineer of what occurred. While the plumbers' helper was doing this, his senior fellow workmen emerged from the shaftway at the third floor and obtaining buckets at a porters' room, filled them at a slop-sink and dashed the water on the flames.

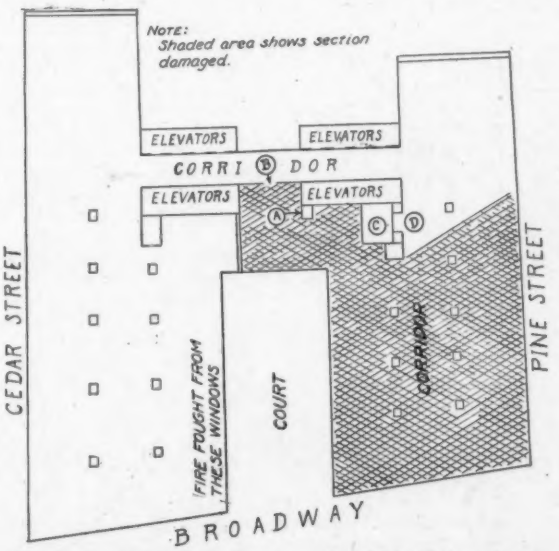


Diagram of the Fire Area on the 35th Floor of the Equitable Building. Shading Shows Burned Portion.

The fire however extended up the shaftway with most unusual speed, burning dust, fragments of scrap paper, lint on the covered pipes and felt and cotton packing and canvas covering which was opened at places where the workmen had to reach the braces or anchors that held the defective pipe to the wall. The engineer sounded the building's fire call, bringing Capt. Judge and others of his house brigade. They surveyed the situation at several floors and stretched the one and a half inch house lines through the shaft doors. The workmen later reported that they smelled burning oil and grease in the shaft.

The flames formed a veritable torch in the shaft, when the manual alarm was pulled, sending to the National District Telegraph Company signal station 3—54—3, indicating special building signal 3, in conjunction with public alarm box 54, terminal 3, indicating the Equitable Building. This alarm was registered at 3:05 a. m. and it brought to the scene Engine Companies 6, 10 and 4, Trucks 10 and 15 and the Chief of the 1st Battalion.

When the first turnout of firemen reached the scene, sparks

Looking for Records, Etc., That Might Have Escaped the Flames in the Offices of the American Smelting and Refining Company on the 35th Floor of the Equitable Building. Note Burned Files in Background.

were shooting from the top of the pent house and could be seen far away. Battalion Chief Michael O'Donohue, the first chief officer to reach the scene, surveyed the situation and ordered the street box to be pulled at 3:19 a. m. This gave him one additional engine company, as well as bringing Deputy Chief James W. Heffernan of the First Division and Chief Quinn of the 2nd Battalion. The companies arriving on the class 3 signal stretched to three siamese standpipe connections, one on Broadway, one on Pine street and one on Cedar street. Two lines to each, making six lines in all.

The high pressure service was then supplying 125 pounds. The engineer of the building was ordered to start his two 1,000 gallon Underwriter pumps and to supply a pressure of 225 pounds.

Two elevators were running up and down carrying firemen with coils of two and one-half inch regulation hose with which to substitute for the building's one and a half inch canvas lines. Deputy Chief Heffernan reached the top of the building where he calculated the concentration would be thickest. The fire had mushrooned in the pent house. There, five workmen, driven upward in the shaft by the heat and the fire, were trapped in the pent house and on the verge of complete collapse.

They managed to break out a window in the top of the pent house, but the drop to the roof of the main structure was about thirty-five feet. They remained perched on the sill of the 41st floor and called for help. The members of H. & L. Co. 15 reached them with a baby extension ladder, which was short of the required distance. The firemen braced the ladder on their shoulders and the five workmen came down to the roof.

While all this was taking place, streams were being played into the shaftway by the crews of Engines 6, 10, 32 and 4. Chief Heffernan reconnoitred from the top floor down and when he reached the thirty-fifth floor he found that the fire had left the shaft at that point through an open door. This door led into the offices of the American Smelting and Refining Company, where considerable office furniture, desks, papers, files, records, office partitions, etc., made ready fuel for the flames. The fire was in full possession of the area marked on the sketch. The situation on the 35th floor caused Chief Heffernan to send a second alarm. This was at 3:46 a. m. and it brought Chief Kenlon to the scene. He ordered a third and then a fourth alarm and ordered 260 pounds on the city's high pressure system.

The alarms and assignments were in the following order:

BOX 54—BROADWAY AND PINE STREET

Time	*Signal*	*Engines*	*Trucks*	*Chiefs*
3.05 a. m..	3-54-3	6, 10, 4	10, 15	1st Batt.
3.19 a. m..	54	32, and W. T. No. 1	.....	1st Div. & 2d Batt.
3.46 a. m..	2-2—54	7, 12, 29, 31, 9	1, R-1	Chief of Dept.
4.10 a. m..	3-3—54	27, 55, 20, 13, 30	8	5th Batt.
4.11 a. m..	4-4—54	17, 15, 33, 24, 25, 11	6	4th Batt.

Dept. Ambulance and Searchlights on 2d alarm.
3 Engine and 2 Truck companies relocated on 2d alarm.
3 " " 2 " " " " 3rd "
4 " " 1 " company " " 4th "

The blaze on the 35th floor gave the firemen their toughe t battle.

The offices into which the door was left open were entirely aflame. The windows yielded and the flames were shooting across the Broadway light shaft to the northwest wing of the building overlooking Broadway. The heat was terrific. The fire was attacked from three sides; 1, from windows in the north west wing of the 35th floor; 2, from standpipe outlets in corridor of southwest wing and 3, from standpipe outlets in corridor of northeast wing, as indicated on the sketch.

The offices on the 35th floor involved in the fire seemed to have been ignited simultaneously by heat radiation, more than by spreading flames. Metal filing cabinets containing correspondence and office memoranda and records, yielded readily to the enormous heat. Such of the metal files as were found intact, contained charred, baked and in most instances pulverized paper documents, beyond legibility and further use.

On the 11th floor a similar shaft door had been left open, evidently by some of the house workers or others making their way out of the shaft. Here too fire extended to the office furniture on that floor, but it was discovered in time by a member of the Salvage Corps. With two extinguishers he put out the blaze and slammed the door shut.

It was the non-self-closing shaft door on the 35th floor that gave the fire fourth alarm proportions. Otherwise the flames could have been confined to the shaftway.

The water damage was considerable. The heaviest losses were sustained by the tenant in the 35th floor's southwest wing. The last fire company "picked up" at 8:40 a. m.

The only casualties were three cats belonging to the Bankers' Club on the 38th floor. Capt. William Hourigan of Engine Co. 32 fell two flights of stairs in the pent house. He sustained a broken leg and other injuries. One lieutenant and six firemen were overcome by smoke and treated by Dr. Harry M. Archer, Honorary Fire Surgeon. The damage is estimated at about $100,000, to building and contents. This does not include the records, papers, memoranda, etc., of the American Smelting & Refining Company.

The Equitable Building Shown in Center, With Skyscrapers on All Sides.

Private Brigade Responsible for Big Loss

Failure to Call City Firemen at Once Results in Large Blaze—Department Overlooked Best Water Supply

THE fire described in this article of the series on administration is one which did considerable damage to a large brass manufacturing plant located on a navigable river in the central part of the country.

This fire differs appreciably from those described in previous issues in that the supply of water from the city system was limited to that through an 8-inch main while the apparatus of the department was also comparatively meagre.

The plant in which the fire occurred is shown in Fig. 1; Fig. 2 gives a layout of the plant indicating the location of

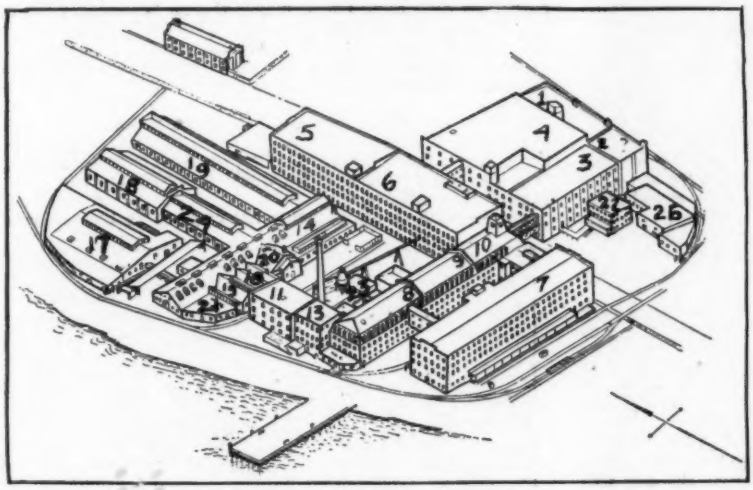


Fig. 1.

hydrants, water main, pier and river as well as the relative placement of buildings.

Nearly all buildings in this group were of brick construction with wood joists and wood finishing throughout.

The only exceptions to the above were buildings Nos. 14 and 19 which were of frame construction.

The larger units were utilized in machining brass articles cast in the foundry. In nearly all of these larger buildings lathe and drill-press work was done and the floors were thoroughly oil-soaked. Heavy machinery was the general rule in all the larger buildings.

Buildings 11 and 13 were probably the most hazardous from the standpoint of fire in that they had previously been used for machine work and the floors were soaked with oil. Subsequently they were used for packing and shipping and as a result the floors were fully stocked with goods both in and out of boxes. There were also large numbers of packing crates and parts of wooden boxes on all floors.

The power plant in building 23 was located directly back of this building and when the fire had gained headway, as described later on, the power equipment was put out of commission, including the two pumps used for supplying water to the plant.

The private fire brigade consisted of three hose companies, and there was a plentiful supply of hydrants throughout the plant. All of these hydrants were supplied with direct pump pressure as there was no storage tank. Suction for the pump was taken from the river.

The Fire Department

The fire department in the city in which this fire occurred consisted of 6 engine companies each equipped with combination pumper and hose apparatus. Two steamers were held in reserve.

There were also 3 hose companies, equipped with automobile combination chemical and hose car; 3 ladder companies of which one was equipped with an aerial ladder truck and the other two with city service trucks.

The response to alarms was as follows: First alarm: engine companies No. 1 and 2, hose company No. 1 and ladder No. 1; the ladder truck was an aerial truck.

Second alarm brought in addition to that on the first alarm engine companies No. 3 and 4, hose company No. 2 and ladder company No. 2.

Third alarm brought engine company No. 5 and hose company No. 3. The additional engine company and the two steamers in reserve are called by special call.

The water supply to the plant was duplex. There was an 8-inch main connected to the city system 1,000 feet away supplying 4 hydrants in front of the plant. Then there was a private plant system supplied by a fire pump which took its water from the river. The two systems were hooked together with gate valve. The gate valve was closed at the time of the fire.

The Fire

The fire started at noon, 12:15 p. m. in building No. 15, the rough-finishing building. It had been burning for some time and as most of the workmen were home to lunch it was not readily discovered. When finally discovered it was found to have entered building No. 16.

Due to the fact that the fire occurred during lunch hour the brigade was lightly manned and upon the sounding of the alarm it took considerable time for the men to accumulate in sufficient numbers to operate the apparatus.

Eventually the 3 hose companies got in operation and each laid a single line from hydrants No. 6, 7, and 8. They operated for a short time but fire got away from them and entered buildings No. 20 and 14.

At this time the city department was called (12:30 p. m.). Upon its arrival at 12:38 fire was entering building No. 11, the packing and shipping building.

Engine Co. No. 1 was placed at city hydrant No. 2 and stretched a single line into the rear of building No. 14. It was the intention of this company to connect to the private main system of the plant so that the long stretch would be avoided and in order that two lines might be laid from the hydrant instead of one. The assistant superintendent of the plant said that the pumps were not of a capacity capable of supplying fire engines so that the fire department officers connected to the city main instead.

Engine company No. 2 was located at city hydrant No. 3 and stretched a single line to building No. 14 through building No. 6.

Hose company No. 1 was stopped at Hydrant No. 3 and

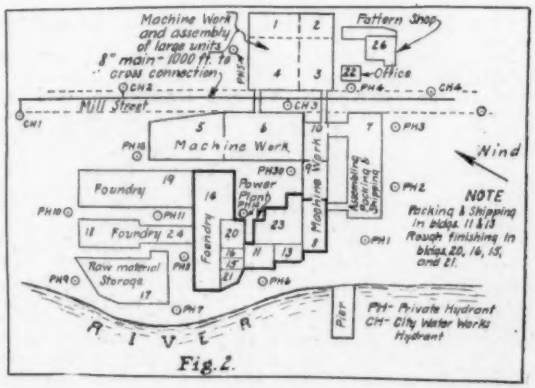


Fig. 2.

stretched a second line from engine No. 2 to building No. 20 where the fire had already entered.

At this time fire entered building No. 11 and was gaining headway rapidly. The chief arrived and ordered the lines from private hydrant No. 6 and 7 to operate on the fire in building No. 11. But the fire, due to the comparatively ineffective pressure on these lines, got away and entered building No. 13. Shortly afterward it was seen that fire was getting into building

No. 23, the powerhouse. Thereupon the chief transmitted a second and third alarm.

Just after the transmission of these additional alarms the pumps in the powerhouse went out of commission. Second line from city hydrant No. 3 was thereupon shifted to operate into power house. There being no pressure now on the private fire protection system these lines were temporarily out of commission. But the plant superintendent was directed to open up the gate valve connecting the city system to the private system and thereafter pressure was maintained in the private system. But it was noted that the streams were considerably weaker from the private hydrants than they had been when supplied by the pumps located in the power station.

Thereupon these streams were discontinued.

Upon the arrival of the first apparatus on the second and third alarm fire had gone through building No. 13 and was in building No. 8.

Engine company No. 3 was placed at city hydrant No. 4 and a single line stretched to building No. 8.

Engine company No. 4 was placed at city hydrant No. 1 and a single line stretched at building No. 14.

Engine company No. 5 was placed at private hydrant No. 1, stretching in two lines to buildings 11 and 13. But immediately upon operating the pumps it was noted that there was a vacuum and engine company No. 5 was then ordered to disconnect and move to the pier and take suction from the river. Upon doing this two lines were streched to buildings No. 11 and 13 and very satisfactory streams put in operation.

This gave the officer in charge an idea, and he ordered engine company No. 3 moved from city hydrant No. 4 to the pier. The engine took suction and two lines were stretched to building No. 8, using members and hose from hose companies.

Engine company No. 4 was also ordered to disconnect at hydrant No. 1 of the city system and station itself at the pier. Two lines were stretched to buildings No. 16 and 20, employing members of hose companies.

All of these lines from engines located on the pier were very satisfactory and it was due to their work that the fire was eventually held.

Engine company No. 1 stationed at city hydrant No. 2 stretched an additional line and used both lines at the rear of building No. 14, alongside of building No. 19. This checked the fire at this point.

Engine Co. No. 2 at city hydrant No. 3 stretched into building No. 14, and checked the fire from extending to building No. 24.

By relocating the lines and covering exposure the fire was eventually extinguished, the damage being confined to the area enclosed in the black line in Fig. 2.

As it was the following buildings were completely destroyed: Nos. 14, 20, 16, 15, 21, 11, 23, 13, and 8.

The fire department deserves great credit for the way it handled the fire once the situation was fully understood and the unlimited supply of the river made available by placing engines on the pier.

The Editor's idea on handling this fire will be given in the next issue of FIRE ENGINEERING.

Wife of Chief Mulcahey Dies

Mrs. James J. Mulcahey, wife of James J. Mulcahey, Secretary of the International Association of Fire Engineers and chief of the Yonkers, N. Y., Fire Department, died in St. Joseph's hospital in that city on February 12. At her bedside were her husband and two sons, Rev. Robert B. Mulcahey, a professor at St. Joseph's seminary at Dunwoodie and James J. Mulcahey, Jr., secretary to the Yonkers Board of Contract and Supply. In addition to her husband and two sons above mentioned, the deceased is survived by a daughter, Mrs. Margaret McManus, of Yonkers, and another son, Albert L. McManus, of Philadelphia. Mrs. Mulcahey had been suffering from diabetes, which necessitated the amputation of one leg. Rev. Robert B. Mulcahey, her son, temporarily relinquished his duties at the seminary to be with her. The funeral took place from the family home, 16 Franklin avenue, and a solemn high mass was held at St. Mary's church, Father Mulcahey acting as celebrant.

While the funeral services were held, the members of the Yonkers fire department stood in silent attention for a minute in front of their respective fire stations. Among those who attended the funeral were the following: Mayor William A. Walsh, George Griot, city treasurer; William Van Keuren, commissioner of public safety; Arthur Chambers, deputy fire chief; William Goldsmith, commissioner of public safety; John S. Kettell, city clerk; James W. Armstrong, building inspector, and representatives from several of the fire departments in neighboring cities and villages.

Prayers were read at the family grave in St. Joseph's cemetery by the Rev. Dr. Mulcahey. Mrs. Mulcahey's familiar presence will be missed at the convention of the I. A. F. E.

MILWAUKEE FIREMEN SCALE MUSIC HEIGHTS VIA RADIO

Perform at Various City Employe Functions and Are Included in Marquette University-Journal Radio Station

CITY firemen are not ordinarily song-birds, but Milwaukee, Wis., has a bunch of fire-fighters who are above the average. They practice instrumental and vocal music at regular intervals in the kitchen of one of the fire houses, furnish melody at functions given by city employes, and recently the band has been added to the program of WHAD, Marquette University-Milwaukee Journal Radio station. The accompanying illustration shows the group broadcasting their first performance from the lounge in the Journal building. Readers of FIRE ENGINEERING will note that they are a husky crew.

Most ignorant people associate firemen with music only in connection with those two immortal ditties, "Fireman, Save My Child," and "Oh, for the Life of a Fireman." It's all wrong. The truth is that firemen—Milwaukee firemen, that is—are likely to be known in the future as challengers of the world in the catch-as-catch-can music, no holds barred and the winner to take all the purse.

Over on the South Side, at 438 National Avenue, is the headquarters of Engine Co. No. 3. In the back room of the engine house, where the stables used to be, but which is now the kitchen, daily are given concerts which would fairly knock your ear out. Music: Hot diggety dog!

The South Side engine house has come to be the rendezvous

Milwaukee Firemen's Band Broadcasting at W-H-A-D

of all the musical firemen in Milwaukee when off duty. An old grand piano that has sort of lost its ear but retains the pep of its youth, is installed in the music room, otherwise kitchen. The walls are proof against the most violent jazz.

Merritt Ramus, pianist; Tom Saskowski, banjoist, and August Boehm, harmonocist, trombonist are the nucleus of the present organization. They began by appearing at various entertainments given by and for firemen, and before long they were famous. Now they have attracted other stars and the gang is growing. Most of the practicing is held in Engine House No. 3, where Ramus, Saskowski and Boehm are stationed. Capt. Ernest Glander, of Engine Co. No. 3, is the manager of the outfit. Chief Steinkellner appointed him to keep the boys from blowing the roof off.

Not all the music offered by the firemen is instrumental. They have a vocal quartet that takes a back seat for nobody and soloists that need no scaling ladder to reach the high ones. Tom Murphy, Engine Co. No. 30; Joe Ross, No. 10; Adolph Ketelholm, No. 16, and Tom Dugan, retired, are the singers.

Low Fire Loss at Fresno, Cal.

When a city of any size shows a reduction of its annual fire loss there is always a reason. From a record of the fire department at Fresno, Cal., it can be stated that efficiency had much to do with cutting down the loss for 1925 to $136,000, as against about $259,000 for the previous year. Chief Thomas Baird figures that this represents a per capita loss for the city of Fresno, of $1.56, as compared with $2.98 for 1924.

How to Select, Operate and Care for Apparatus

Some Excellent Suggestions That Will Be Found of Value—Requirements for Reliable Protection Should Govern Choice—Care and Up-Keep

By HARRY J. CORCORAN, Chief Engineer, Iowa Insurance Service Bureau, Des Moines *

THE purchase, care and maintenance of fire apparatus and equipment is a matter that concerns every fire chief in the country. On him devolves the responsibility of choice and of seeing to it that the equipment is kept up to the mark after it has been acquired. The following article contains many excellent suggestions along these lines:

Councilmen and fire chiefs in smaller communities are perplexed as to various kinds of equipment and do not always know where to get unbiased information. The introduction of motorized apparatus is spreading to all sized towns, and almost any automobile carrying fire fighting equipment looks fine when contrasted with hand drawn carts. Also the cost of even the cheapest truck seems enormous. It is hoped that information given here will help at least some officials in selecting new or additional apparatus.

Reliable Protection Basis of Choice

It is conceded that only one thing should govern the choice, namely, the requirements for reliable protection. Unfortunately financial limits are important and in more of the smaller towns must be considered; in a city able to maintain a paid fire department there should certainly be enough money available to buy equipment on the basis of suitability.

A village with two half-blocks of frame and brick buildings of one and two-story height can experience a pretty severe fire; reliable protection would require at least several streams of water. The total value of property in the business district may not exceed $100,000; the cost of water works and fire apparatus which could be counted on to stop a serious fire would easily reach $20,000 and be entirely out of the question.

Chemical Apparatus Solution for Small Towns.

In such cases, the common solution is to install a chemical engine to provide some measure of fire protection. This engine may be hand drawn or motor driven and may carry from one to four tanks, but usually two, with a nominal capacity of 35 or 40 gallons each. For general use the soda and acid type is most suitable; with hand drawn equipment there is a slight preference if the acid is in sealed bottles which must be broken to operate the engine, although loose stopple types are in successful use. When pulling over streets behind automobiles the loose stopple type may slop acid and generate pressure too soon. If the tanks are mounted on an automobile there is little trouble from slopping and the simplicity of the loose stopple type makes it preferable. Tanks are made of both copper and steel and they must be lined with lead or zinc. The lining of steel tanks can be successful with proper workmanship.

If possible there should be two lines of small hose so the fire can be attacked from two places, and 100 feet is the minimum suitable length for each. The method by which this type of extinguisher puts out a fire is really double; when the acid and soda solution mix, carbon dioxide gas forms, which creates a pressure of 125 pounds or more; there is quite a stream of water forced out by the pressure developed in the tank and this water quenches fire which it strikes.

A type of extinguisher which generates a thick foam is growing in favor, and it is particularly effective in grease and oil fires. The foam sticks to almost any surface and floats on oil, acting as a blanket to smother the fire. When used for general fires the foam must be sprayed on all parts of the burning surface. The large use of oils in all cities and towns warrants the installation of at least portable extinguishers of this type.

Chemical Engines Need Regular Attention.

All kinds of chemical engines need regular attention to give satisfactory service. The soda and acid type should be discharged, thoroughly cleaned and recharged once each year, hose, nozzles and other working parts examined. There is often trouble from corrosion and sometimes leaks; this is hard to stop if once started. The tank should be carefully cleaned and packing renewed if the trouble is bad; coating affected parts with a good grade of vaseline will sometimes help. Chemical extinguishers of both these types must be protected from freezing, and of course they work best when fairly warm. Occasionally complaint is heard that the acid and soda do not mix readily and the acid destroys cloth. When the device is properly charged this cannot happen; if the soda solution is old and the mixture cold it is possible that some weak acid might be discharged, but with the worst condition this is unlikely. Reliable manufacturers furnish complete instruction for care of equipment.

"Above all, do not try to get too much for your money."

Must be Used at Beginning of Fire.

To be effective, all chemical extinguishers must be in use before the fire has really got a good start. This means that the firemen must thoroughly understand them and not lose time at the fire finding out how they work. Not long ago a serious fire occurred in a town near Waterloo, Ga., because the tank had not been properly assembled after a former fire. Occasionally the tank is left uncharged in cold weather to avoid cost of fuel to keep it warm; the money spent for the machine would better have been given to charity. Carrying tanks on an automobile speeds up their use and is better than a hand machine. Such a machine can carry ladders, axes and other tools needed at a fire. Longer hose lines will be needed than with hand equipment. The machine should be able to carry five men and make a good speed.

Some towns which cannot afford to install water works build cisterns in various parts of town and rely upon a pump carried on an automobile to pump the water to the fire. A few places have a river through town which can be used for water supply. In both cases permanent landing places for the machine must be provided and definite plans made for fighting a fire in all buildings. The pump should of course be adapted in size to the supply of water available and be of a reliable make. Home made or assembled equipment for this purpose can only be classed as makeshift. A machine made by a reputable manufacturer should be purchased if at all possible and more will be said about this type of equipment later.

Hose Carrying Apparatus

Taking up first the hose carrying apparatus, the one to choose will depend upon the pressure and quantity of water available from the water system. If there is adequate pressure at the hydrant while large quantities of water are being used, a pumping engine is hardly necessary. When buildings are three stories and higher, few water systems can furnish water at necessary pressure direct from hydrants. The amount of water available over the time a large fire might last has a bearing on the question; the distribution of hydrants must also be studied. Ordinarily a hose car should carry 1,000 feet of 2½ inch hose, 26 to 30 foot extension ladder, hook roof ladder, two or more nozzles with ¾ to 1⅛ inch tips, one or more large chemical tanks; portable chemical is used in putting out a majority of fires even where a good water system exists, and a longer chemical hose will be necessary than with hand engines, at least 150 feet. Large hose is laid in on the way to the fire which permits using

* From paper presented at first Short Course for Fire-Fighters, at Iowa State College at Ames.

"Only one thing should govern the choice, namely, the requirements for reliable protection. Unfortunately financial limits are important and the smaller towns must be considered; in a city able to maintain a paid fire department there certainly should be enough money available to buy equipment on the basis of suitability."

the chemical and a water stream together. Provision should be made for attaching large hose to the chemical line by cap attached to piping from the chemical tank; a reducer Y can be screwed to the end of the large hose and one to three small hose lines used for many swelling fires and cleaning up at fires in business buildings; this necessitates carrying the small hose.

Care in Choosing Ladders

More thought should be given to picking ladders than usually is. When a town installs an automobile hose and chemical car, the hand ladder truck is allowed to become unusable; for this reason there should be at least one good extension ladder on the car, which will reach to any roof, and one shorter ladder. There should be power to carry five men in addition to equipment at a speed of 20 miles per hour. The particular make is more or less a matter of opinion; in smaller communities the number of runs per year and the size of the town will often permit a commercial truck chassis to be used to good advantage. When this is done a car with a good pickup and strong transmission is necessary.

Apparatus Should be Regularly Inspected

Every piece of fire equipment, and particularly motorized apparatus should be under the supervision of a competent per-

(*Continued on page 212*)

RECORDS OF WATER COMPANY SAVED BY FIRE-PROOF SAFE

Office and Repair Shop of Fairhaven Water Company Destroyed in Fire Originating in Boat Shop—Meters and Tools Total Loss

By H. T. GIDLEY,
Superintendent, Fairhaven, Mass., Water Company.*

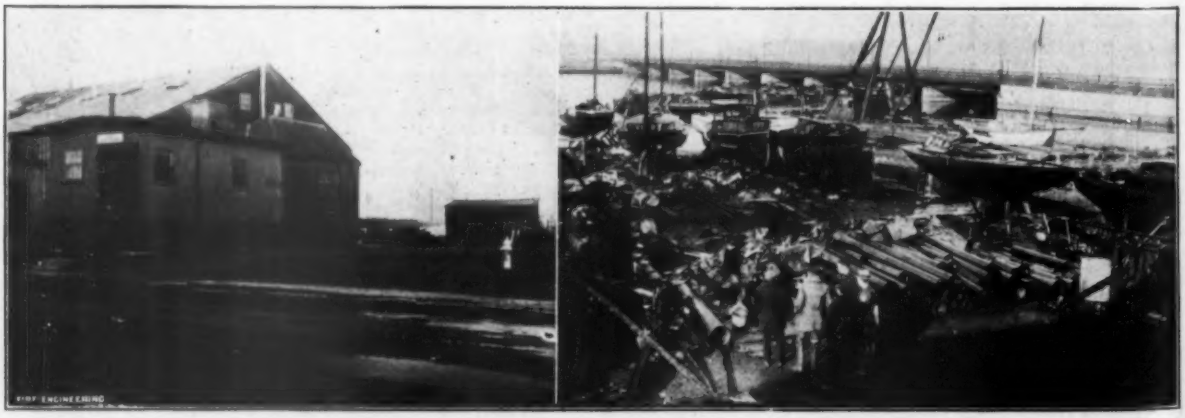
A REMARKABLE case of the preservation of the invaluable records of a water company occurred in a fire which originated in the boatshop of Major Casey, a large three story frame building at the foot of Bridge street, Fairhaven, Mass., on October 24 last. In spite of the fact that both this structure and the offices and repair shop of the Fairhaven Water Company were a roaring furnace when the firemen arrived, the contents of the company's B. Label Securities safe, consisting of all of the records of the company, were found after the safe had cooled sufficiently to open it, to have stood up remarkably under such intense heat and nothing contained therein was damaged. In fact the drawers with contents and shelves were removed from the old safe and placed in the new safe without the least trouble at all.

Just to the east of the boatshop where the fire originated was a small one story building used by the Water Company for an office and workshop. These two buildings were so far gone when the firemen arrived that nothing was saved from either. An alarm was rung in at New Bedford soon after the Fairhaven alarm was sounded, and two pumpers were sent over the river. These two pumpers together with the American-LaFrance pumper of the Fairhaven Department did good work in controlling the blaze, as the wind at the time was from the north west and the whole town was threatened. The blaze was under control by 3 a. m.

Two dwelling houses were badly damaged besides the buildings already mentioned. One was a cottage across the street from the Water Company's office, which had its front pretty well burned. The other was a cottage in the lot next east to the Water Company's lot. This cottage had the roof burned off and the west side quite badly burned. There were many boats in the boatshop entirely consumed besides a number of expensive pleasure boats which had been just hauled out in the yard for the winter, which latter were badly damaged if not entirely consumed. In the Water Company repair shop the fire was so hot that the tools were a total loss. New meters on the shelves were burned up like cardboard, window glass melted and was found moulded in various shapes and the enamel was melted off of the cast iron lavatory.

This Safe Went Through Fire, in Fairhaven, Mass., Water Company's Offices with Contents Uninjured, as Shown in the Illustration.

* From a paper read before the January meeting, New England Water Works Association.



Left:—Office and Repair Shops of the Fairhaven, Mass., Water Company, Before the Fire. Right:—Conditions in Plant of Company After Fire, with Ruins of Building at Extreme Right of Picture and Boat Yard in Rear.

WITH THE EDITOR

Fireproof Building Get a Real Test

Since the erection of the 40-story "fireproof" Equitable Building in 1913 there has been many conjectures as to just what would happen in the event that fire gained a hold within the building.

The fire of last week settled all doubt.

A blaze starting on electric cables at the third floor quickly followed up through a pipe shaft the entire height of the building along the cables, and spreading to combustible materials around piping penetrated the 11th and 35th floors, doing considerable damage on the latter floor.

Fire gained such headway on the 35th floor that approximately one-quarter of the floor was involved at the time the fire department got fully into operation. Of passing interest, the origin of the fire demonstrated one thing, that fire does not require much combustible material to make headway. Involving the insulation around electric cables it generated sufficient heat to spread to combustible materials around pipes and then involved the entire shaft 12 x 12 feet, entering two floors and involving a pent house at the top.

It seems almost incredible that insulation on the cables afforded sufficient combustible material to create the heat indicated in the shaft. But the experience at the Granite Mountain fire in Butte, Montana, where scores of workmen lost their lives shows very clearly that electric cables constitute a real hazard when it comes to spreading fire. At that mine fire wiremen working down around the 2,000 foot level on the electric cables permitted a torch to burn some of the frayed cable insulation. The flame quickly traveled up the cables and involved the timbering through the main shaft. The result was a mine fire which did tremendous property damage and with an astounding loss of life.

But the real lessons of the fire are two-fold: first, no building will ever be fireproof until its contents are absolutely fireproof.

Second, human carelessness will always represent a serious fire hazard.

In the Equitable fire it is very doubtful whether the fire would have ever entered either the 11th or 35th floors had it not been for carelessness of employees within the building. Both of the doors leading from the shaft to these floors had been fastened open by the workmen employed in the shaft. When fire rose through the shaft it quickly mushroomed in on to the two floors with the results described in an article elsewhere in this issue.

Had care been observed and these doors been kept closed, or even closed after the fire had started, the loss would have been negligible.

And as far as the fireproof qualities of the building are concerned, they demonstrated beyond question their merit. While the combustible contents of the 35th floor area were destroyed by the fire, the fire walls provided sufficient barriers to segregate this particular section of the building, and withheld the fire and prevented it from spreading beyond the section immediately involved.

With the fire department promptly at work and with the aid of the fireproof fire walls, the fire had no chance of extending to other parts of the building. In view of the fireproof construction of the main walls as well as the floors, there was little chance of the blaze getting either above or below the floor involved. This fire has shown in an admirable manner just what can be expected of fireproof construction.

One point which is of particular interest to the fire fighting officers of this country is the effective manner in which the New York Fire Department handled the blaze. A fire 35 floors above the street represents a very difficult task for fire fighters, particularly where the men must work from within the building in operating on the fire. But the standpipe and water supply facilities required by law in New York made it possible for the men to get streams from standpipe connections both on the fire floor and the floor beneath and to get these streams on the fire with satisfactory pressure to carry them. Then, too, the perfection of the elevator machinery and segregating of elevator shafts from the various floors by fire resistant construction and appliances made it possible for elevators to be operated while the fire was raging at its height. The elevator service proved a big factor in enabling the department to do prompt and effective work.

Would-be prophets are predicting what might have happened had the fire occurred during business hours when the building was filled with tenants. But in all of the predictions as to panic and loss of life no consideration is given the very excellent exit facilities in the form of stairs which are enclosed in fireproof shafts. Nor is consideration given the fire walls dividing the building into separate sections and making it possible for the tenants of one section to retreat into another section and to safety in the event of fire gaining a hold in any part of the building.

Considering the condition of stairwalls and elevator wells during the fire it is safe to predict that with prompt response by the fire department and proper direction of the people there would have been no loss of life, and, in fact, no serious injury to any of the tenants had the fire occurred during hours when the building was fully occupied.

Outside of the element of carelessness which caused the extension of the fire, the manner in which the building

withstood the test may be considered most satisfactory.

As a final word it may be added that no building will ever be absolutely fireproof until the contents thereof are in keeping with the nature of the materials entering into the construction of the building.

Transporting Explosives Through Towns

Four men were killed and considerable damage was done when 200 sticks of dynamite exploded while being hauled through Coral Gables, Florida, a couple of weeks ago.

Report of investigation shows that the explosive was being hauled through the city on a motor truck and upon discovering the truck to be afire the men thereon jumped but too late to save th ir lives.

This incident alone emphasizes the wisdom of the stringent regulations covering transportation of explosives through streets as enforced by large cities.

Small cities and towns, however, have been very lax in providing safe-guards against such accidents, for the number of such small municipalities which have legislation covering this subject is indeed small. Dynamite is so commonly employed now in all construction work that the public becomes calloused to the dangers involved in the handling of this material. It would be a simple task for any city or town having an established code of ordinances to incorporate within it provisions governing the hauling of explosives. Where the thoroughfares in towns are congested with motor traffic an explosion of the type experienced at Coral Gables would be fraught with tremendous life and property loss.

It is suggested that provision be made in local ordinances prohibiting the transportation of explosives on city and town streets except during the early hours of the morning, and also that when such explosives are being transported the conveyance in which they are being carried be properly identified by signal lights.

Columbia County Firemen Form Association

An association of the various fire companies in Columbia County, was formed at a meeting in January at Philmont, N. Y. In spite of the adverse weather, about seventy-five attended the organization meeting.

The following guests attended the meeting and gave short talks to the delegates on the formation of their respective organizations: William H. Frank of Poughkeepsie, president of the board of trustees of the Hudson Valley Firemen's Association; Chris Noll, Poughkeepsie, secretary of the Hudson Valley Firemen's Association; Samuel Fowler, Renssalaer member of the board of trustees of the same organization; W. H. Hallenbeck, Coxsackie, president of the Green County Firemen's Association; Edward Cinnamon, Renssalaer county vice-president for the Hudson Valley Association.

The following were elected officers of the new organization: Henry Buxbury, Hudson, president; Harold DeWald of Philmont, first vice-president; Nathan Wild, Jr., Valatie, second vice-president; George Feltner, Stockport, secretary; Stanley Miller, Germantown, treasurer and a board of directors consisting of Mark Rosenthal, Hudson; Adrian Langdon, Copake; Paul T. Winslow, Niverville; F. Park Dimmick, Hillsdale; Wright B. Drumm, Chatham.

New Chief at Williams Bay, Wis.—Victor Hanson has been elected chief and Arthur Anderson assistant chief of the fire department of Williams Bay, Wis.

GREAT NUMBER OF ENTRIES IN THE FIRE PICTURE TITLE CONTEST

THE Metro-Goldwyn-Mayer Studios, of Culver City, Cal., producers of the motion picture to be sponsored by the International Association of Fire Engineers, report that they are literally swamped with entries in the $1000 prize contest for a suitable title for this picture.

The contest, which was open only to members of Fire Departments, closed February 20th, and it was hoped that the prize winners would be selected in time to list them in this issue.

Owing to the large number of titles submitted, far more than had been anticipated, the judges will require another week or more to properly tabulate the returns and decide on the winners, after which proper announcement will be made both in the press and to individual contestants.

Further details relative to the picture will be published shortly.

This is a Fire in the "Sunny South"

A recent second alarm blaze at Wheeling, W. Va., which destroyed two buildings amid zero conditions, as the picture shows. The fire, according to Chief E. A. McGranahan, was fought from front, rear and from adjoining structures, and in spite of severe cold, was confined to the two buildings. Three 150-gal. stills were found by the firemen in one of the buildings.

Morristown, Minn., Elects Chief—H. A. Krueger was elected chief of the fire department at Morristown, Minn.

Carmel, Cal., Makes Leidig Chief—The city trustees of Carmel, Cal., have elected Robert G. Leidig chief of the fire department, to succeed J. E. Nichols, resigned.

El Paso, Tex., Firemen Ask for Salary Increase—Four officers of the fire department of El Paso, Tex., have appealed to the city officials for a living wage. At the present time, a fireman enters the service at $115 a month and may be advanced to $130. Lieutenants receive $140 and captains $150 a month.

Fireman Killed in Des Moines, Ia., on Way to Fire—The force of a collision of a ladder truck and a touring car in Des Moines, Ia., threw one of the firemen who was riding on the running board, on to the pavement and caused his instantaneous death. The driver of the touring car will be held on a charge of manslaughter.

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Methods of Putting on Tire Chains and of Placing Engines at Suction

To the Editor:

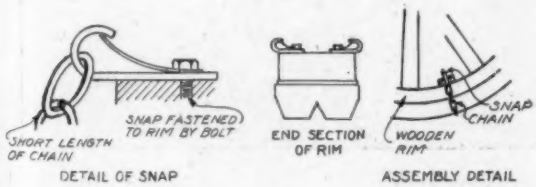
The description of the following clamp might be a solution to the problem presented by R. L. Titus in the January 10 issue of FIRE ENGINEERING. Where there is enough clearance between the felly of the wheel and the drive chain, a clamp resembling the buckles used on rubber coats but made in a forging are used. In place of the opening made for attaching to the coat, it has a plate about 2 or 2½-inch square with about a ⅝-inch hole through the center. One of these is placed inside and one outside of the wheel and a long bolt, the size of the hole is put through the wheel in the wooden part to hold them in place. The chains used are cut in pieces just long enough to make the span easily and quickly. The chances of this chain coming off is small as the pulling tension is always on the hook which is made to stand the strain. This is used only on solid tires.

The following is one of the methods in which I was instructed to get the suction in the water. Our suction is in two lengths of 5 or 6-inch diameter. Two men take each length, the man on the male end of one, preferably the driver, at a position near his pumper connection. The one on the female end of the second length brings it to attach it to No. 1 male and held by a third man who has a hammer and block handy. When the coupling is screwed tight by hand, it is further tightened by the hammer and the block. When this is done, the man moves to the female end of the second length to help attach the strainer. When this is attached, the third man who has been holding the suction moves to the driver while the two who have attached the strainer push it off the dock and hold the rope attached to the strainer.

By letting the rope out at reasonable speed, the suction soon comes in line with the pump and the driver attaches it while the man near him keeps wiggling it so that it may be more easily and securely fastened to the pumper.

Yours truly,
J. B., Buffalo, N. Y.

Another answer to the first query has been received from a member of the New York city fire department. It has many points in common with the previous plan. As illustrated, it consists of a snap which is fastened



on the inner side of the wooden rim of the auto wheel. One snap is fastened so that the snap proper extends somewhat beyond the outer surface of the wheel and one is similarly attached so that it extends somewhat beyond the inner surface of the wheel. These snaps are attached at about four points on the wheel equidistant. Short lengths of chain are provided, long enough to snap on one fastener and pass around the wheel, fastening on the other snap. There should be some play on the chain so that all the wear will not occur at one point on the tire.

Denver Promotional Questions

To the Editor:

I am enclosing herewith a set of examination questions which were recently asked in the city of Denver. I shall highly appreciate your courtesy if you will answer them in an early issue of FIRE ENGINEERING.

Sincerely yours,
F. A.

Arithmetic:

(a) How many cubic inches in a cubic foot?
(b) What is the weight of a cubic foot of water?
(c) If the tank on a Seagrave pumper is 3 ft., 6 in. long, 12 in. wide and 2 ft., 6 in. high, what is its capacity in cubic inches?
(d) What is its capacity in cubic feet?
(e) What is its capacity in gallons?

Special Subject:

1. What are the main duties of a lieutenant of the fire department?
2. (a) State the various purposes for which life lines and hose lines are used at a fire.
(b) Describe the method of hoisting a hose to roof of a building and making fast a line of hose to a ladder?
(c) When it is advisable to use a life net?
(3) As lieutenant of a company you make an inspection of your district. Describe five common instances which cause fires?
4. What is meant by a siamese connection?
5. On your way to a fire you discover a second fire. What would you do?
6. What should be done for persons overcome by smoke?
7. What modern fire fighting equipment is most effective in fighting fires in a district of scattered small houses? In tall buildings?
8. When two officers of the same rank are at a fire, who is in charge?
9. Which is more dangerous from a fire risk standpoint, a can filled with gasoline and half filled and why?
10. What fire fighting equipment should a modern fire department contain in a city of the size of Denver?

Answer (a) In one cubic foot there are 1,728 cubic inches.

(b) The weight of a cubic foot of water is approximately 62.5 lbs.

(c) To determine the volume of the tank multiply the three dimensions together, first getting them all in the same denomination. That is, change the feet to inches before proceeding. The tank is 3 ft. 6 in. long by 12 in. wide by 2 ft. 6 in. high. This is equivalent to 42 in. long, 12 in. wide and 30 in. high. Multiplying these three figures together we get a cubic content of 15,120 cubic inches.

(d) The capacity in cubic feet is found by dividing 15,120 by 1,728, giving a capacity of 8.75 cubic feet.

(e) The capacity in gallons is found by dividing 15,120 by 231 cubic inches (in a gallon) giving 65.454545 gallons.

Answer 1. The duties of a lieutenant responding to and at a fire are as follows: In going to and returning from a fire the lieutenant of an engine company (except when acting as captain) rides on the engine (motor). The lieutenant of a truck company rides on the turntable of the apparatus. In the absence of the captain he directs the driver.

When the first company to reach the fire grounds is in charge of a lieutenant, he assumes full command of the fire until the arrival of a captain or higher officer. If no company other

than those which lieutenants command answer the alarm, the lieutenant first to arrive retains command.

When he is operating under a captain, he sees that orders given by the captain are carried out, acting in the capacity of a foreman following out the instructions of a superintendent.

The duties of a lieutenant around the station include the supervision of all station routine, under the direction of a captain, and the lieutenant must see that such routine is properly carried out. A lieutenant has access to all books and records of his station and should be thoroughly familiar with all the affairs of his company.

Answer 2. (a) In most departments, particularly the smaller ones, life lines and roof lines are the same thing. In this case they are used for hoisting hose, hoisting ladders, rescue of imperiled persons, and escaping from the roof of buildings by firemen operating thereon. Where the life lines are used only for rescue work, then their service is limited to assisting in the escape of imperiled persons only.

Hose lines are used for conveying water under pressure from the source of supply to fires. In this connection they may be used to supply standpipes which in turn feed hose lines used for operating streams, or the lines of hose may supply water to nozzles, deck guns, street pipes, water towers, or even discharge water directly from open butts on the fire.

(b) The method of hoisting hose to the roof of a building is as follows: It is assumed that you wish to take it to the roof along the outside of a building. The men should take the following with them when they go to the roof: Roof rope, hose roller, axe, and nozzle; also pipe holder if they intend to use large streams. On reaching the roof they place hose roller on the cornice and make it fast with rope, which is attached to hose roller for that purpose. They then lower down the roof rope. Men below fasten rope around the hose, two feet from the butt, two half hitches and a binding knot, then the line is hoisted to the roof. Have two lengths of hose on the roof for working. Fasten the line below the cornice with a rolling hitch and pull rope back on the roof and make it fast around the chimney hitch. Put nozzle on and line is ready to charge.

As to making a line fast to a ladder, this should be done in such a way that it can quickly be detached so that the line may be shifted or ladder may be moved at short notice. The best method of attaching hose to a ladder is to use a ladder strap with hook-handle. The strap is passed around the hose and snapped and then the hook handle is fastened to a rung making a secure but quickly detachable fastening.

(c) It is advisable to use a life net where persons are in extreme danger and are about to jump. The use of a life net as a prime means of rescuing persons where ladders are available and where they can be brought down by ladders is not recommended. There are some cases, however, where so many people are in danger and fast work has to be done in getting them to the street that life nets are advisable.

They should never be used for rescue work where the imprisoned people have to jump more than four stories in height. While it may be possible to jump from a greater height than this, extreme danger is present both to the men holding the net and to the person jumping.

Answer 3. Five common causes of fire are: neglected and defective chimneys; acumulations of rubbish; placing hot ashes adjacent to combustible bins or combustible containers; presence of oily combustible materials such as rags or waste saturated with vegetable oils; defective heating systems.

Answer 4. A siamese connection, as a device, is a hose fitting by which two lines of hose can be made to deliver water to a single line. This device is used where great stretches are required and where in order to reduce the friction loss two lines are employed to feed a single line near a fire. The usual procedure is to stretch parallel lines up to a point about 100 feet from the fire and then stretch a single line from this siamese connection to the fire.

Siamese connections are made in different forms but the most common employed is that which has 2½ inch connections all around, the side of the siamese connection on which the two lines feed into it are equipped with female connections while the end which discharges into the single line is equipped with a male connection.

Answer 5. Drop off a man at the nearest fire alarm box to the second fire and instruct him to pull an alarm; he is to do what he can alone at the second fire until the apparatus in response to his alarm pulls in. In the meantime, the captain and his company continue on their way to their original alarm. Should there be immediate danger to life at the second fire, then, of course, the above would not apply. Should there be such danger to life, the company should stop at the second fire. One man should send in necessary alarm; fire headquarters should be notified immediately of what the company has done so that the original assignment can be turned over to some other company.

Answer 6. The first thing to do in the case of a man being overcome by smoke is to carry him to the street and then to a spot where the atmosphere is free from smoke. He should be transferred on a stretcher if a stretcher is available. Immediately upon getting him to a point of safety, stretcher should be set down and the patient covered with a blanket. His mouth should be examined and all foreign bodies such as false teeth, tobacco, etc., should be removed.

If equipped with oxygen apparatus administer oxygen at once.

Artificial respiration should be given while the patient is still kept warm. Have a blanket for him to lie upon and order the stretcher nearby so that as soon as respiration is properly established the patient may be removed to the nearest hospital. Never allow a person who is not breathing to be placed in an ambulance or taken to a hospital until respiration has been re-established by artificial means and has become regular and deep. The person who might be saved if artificial respiration was started at once may be lost if put in an ambulance to be driven many blocks to a hospital. In all cases where there is a discoloration of the patient's face medical advice should be had instantly for the patient may be suffering from edema.

Answer 7. The apparatus which is probably most effective for fighting fires in districts of scattered small houses is the triple combination machine having chemical apparatus thereon. While chemical solution is not appreciably more effective than the equivalent quantity of water still the fact that the truck has extinguishing fluid right at hand and the means of forcing it through the hose or nozzle (gas pressure) makes it effective for handling small fires. As a matter of fact as high as 90% of residential fires in many cities are handled with the chemical apparatus alone.

In the section of the city where there are tall buildings pumping engines of large capacity and good pressure are essential. While the standpipes in buildings are the most effective means of handling high fires, still at the same time many buildings are not equipped with standpipes and in such a case a water tower is very desirable.

Next to the water tower stands the deck gun. Heavy stream appliances placed on the street are effective in covering exposures but cannot be considered as effective in extinguishing fire on highers floors due to the lack of penetration.

Answer 8. When two officers of the same rank are at a fire, the first officer to arrive at the scene of the fire is in command.

Answer 9. A can half filled with gasoline is more dangerous than a can filled with gasoline. A can filled with gasoline contains practically no gas over the gasoline and as gasoline itself will burn rather than explode it does not constitute as severe a hazard as a can partly filled with gasoline and the rest of the space filled with gas which is explosive.

Answer 10. The major fire fighting equipment which a city the size of Denver should possess includes the following: 6 motor pumpers accompanied by hose tenders having deck guns, 16 triple combination motor fire trucks carrying pumps, hose and chemical apparatus; two aerial ladder trucks and 7 city service ladder trucks. A water tower is also advisable in the events that buildings are not required by law to install standpipe systems when above a certain height.

What Dynamite Did to a Truck Passing Through Streets of Coral Gables, Fla.

The explosive was being transported in the truck—200 sticks of it—through the streets of the town, when one of the workmen on the vehicle noticed smoke arising from the gas tank. He called to the others to jump and ten of them escaped. Four others were blown 400 feet from the spot of the explosion, being instantly killed. The illustration shows the condition of the truck as the smoke of the blast cleared away.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

Fire Alarm Technology

The following general information on fire alarm systems, which is included in a bulletin entitled "How Many Fire Alarms a Year?" and issued by the National Fire Protection Association, is of interest because it explains in a simple manner the various

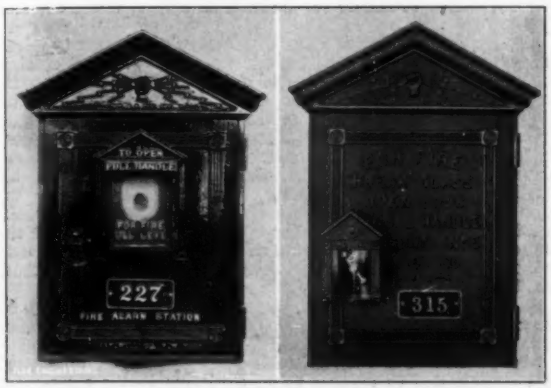


Fig. 1. (Left) Box with Quick Action Door. Fig. 2. (Right) Key Box.

terms used in fire alarm systems and gives some useful suggestions relative thereto.

Boxes

BOX WITH QUICK-ACTION DOOR—This box (shown in Fig. 1), is the most modern. The hook or starting lever projects through the outer door. A hinged glass plate with a handle covers the projecting lever. This enables a person to see—before the emergency of fire makes it necessary—exactly how to operate the box. To send an alarm the glass plate is pulled down by the handle and then the hook is pulled.

KEYLESS BOXES.—These are of two types. In sounding the alarm on the older type you turn a handle to open the door, which action rings a gong. Then you must pull the hook inside. This type has proven dangerous because users frequently think on hearing the gong that the signal has gone in, and have not pulled the hook. The newer type is so arranged that the alarm is sent when the door is opened.

KEY BOXES.—Where key boxes are now used the key is put under a glass guard (Fig. 2). To send the alarm you break the glass, open the door, and pull the hook. An archaic type still persists in certain cities where the box is kept locked and the key is placed in a near-by house. This type can be readily brought up to date by placing the key in the box and adding a glass guard.

BOX MECHANISM.—By means of a signaling "breakwheel" which is put in operation by pulling the hook, a number identifying the box is transmitted to fire alarm headquarters.

A Circuit

In order to keep installation expense as low as consistent with effectiveness, as many as 20 fire alarm boxes are usually connected on a single series circuit (see Fig. 3). Where all wiring is underground it is safe to connect 30 boxes on one circuit.

Non-Interfering Boxes

An elementary fire alarm box will, when pulled, send in its own particular signal. Frequently several people discover the same fire and each turns in an alarm, but from different boxes, at the same time. If the boxes are on the same circuit the signals of all the boxes may be lost or confused. A box on the non-interfering type is designed to prevent this.

Succession Boxes

Although the better than the plain "interfering" box, the non-interfering type still needed improvement because it shut out and caused the loss of any second signal on a circuit. Consequently, the "succession" and non-interfering type has been developed wherein the second signal is not lost but is transmitted as soon as the first signal is completed. This is the standard type of box.

Box Distribution

It should always be possible to find a box within a reasonable distance along any street.

Boxes should be conspicuously located, preferably at street corners. Where possible a red light should be provided to make it easy to find the box at night (Fig. 4).

CONGESTED DISTRICTS.—A box should be plainly visible from the main entrance of any building.

MERCANTILE AND MANUFACTURING DISTRICTS.—It should not be necessary to traverse more than one block nor more than 300 feet to reach a box.

RESIDENTIAL DISTRICTS.—Where closely built a box should be within one block or 500 feet; elsewhere three block or 1000 feet. Distance is measured along the main artery of travel.

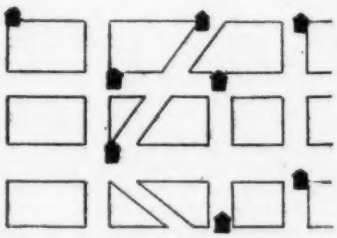


Fig. 4. Suggested Plan of Fire Alarm Box Distribution.

Fire Alarm Headquarters

The alarm headquarters should be a fire-resistive building, preferably unexposed (*i.e.*, no building within 150 feet). If exposed, the roof should be built to resist destruction by falling walls, and doors and window openings protected by fire doors, or shutters or wired glass.

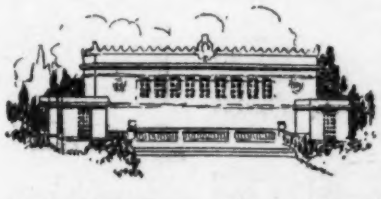
Automatic System

In this type of system, adequate for cities having less than 300 fire calls a year, the central station apparatus is automatic, box signals being retransmitted through a repeating instrument to engine houses and public alarms. With over 300 alarms, a man must be on duty to make frequent tests to insure the constant operation of the system; also to handle telephoned alarms, which are quickly relayed to engine houses.

SEMI-AUTOMATIC SYSTEMS.—With a man on duty the central station may be operated in a semi-automatic fashion. On an alarm, one round of the box signal is received as usual. If no other number is being transmitted, the operator shifts a switch and subsequent rounds of the box go automatically to the engine houses.

Manual System

In larger cities every piece of apparatus is not sent to every fire. In an adequate system, when more than 600 fire calls are



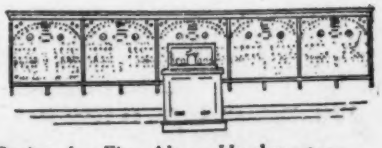


Fig. 3. (Left) Single Series Circuit for Fire Alarm Boxes. Fig. 5 (Center) Design for Fire Alarm Headquarters. Fig. 6 (Right) Arrangement of Central Fire Alarm Station Apparatus.

received per year, all alarms at the central station are handled manually. Two operators are constantly on duty to receive the calls and to transmit the signals to the particular engine houses from which apparatus is to respond.

Manual operation is actually faster than automatic. Street boxes are speeded up, operators develop amazing skill in handling calls at the central office and the signals go at fast rate over the primary circuits to fire stations.

ALARM CIRCUITS.—There are two alarm circuits, a primary and a secondary, between fire alarm headquarters and each fire station. The primary carries the rapid signals which are received on tappers, registers and quick action instruments in the engine houses. The secondary carries the signals at a lower rate to operate the heavier gongs.

Telephone Auxiliary

The telephone can help to offset deficiencies in existing fire alarm systems. It is, however, not designed for nor adapted to fire alarm service. Cities which depend on the telephone soon find that because it is ordinarily inaccessible from the street a passer-by, on discovering a fire, cannot promptly report it. This is especially serious in mercantile and manufacturing districts where the buildings are unoccupied most of the night and on Sundays and holidays.

A telephone system provides no ready means of inter-fire department communication, or means of summoning call men or of sounding second alarms. Its principal merit is cheapness.

Central Station Apparatus

The central station is the nerve center of the fire alarm system. It must be equipped with apparatus designed to receive and record every fire call and to retransmit it promptly to engine houses (see Fig. 6). Because this apparatus must be unusually accurate and thoroughly dependable, it is often more expensive than apparatus where the demand for reliable performance is not so severe. To handle alarms instruments such as repeaters and transmitters are necessary, and registers and time stamps are desirable. Provision for telegraphing or telephoning over alarm circuits is often made.

Other requirements at the central station are reliable current supplies and test features to enable quick location of circuits or apparatus out of order. Elaborate test boards are necessary to make tests readily, to check up on the current supply and to warn automatically of failure of any part of the system.

Palm Beach Fires Fought by "Blue Bloods"

The vast multitude of people that make the Florida coast cities their mecca are sufficiently human to become tired of pursuing any one pastime, and consequently look about for a diversion. The influx of outsiders at Palm Beach is of a cosmopolitan character, and naturally includes many young bloods of an athletic turn. The city has recently been visited by more fires than common, and with a purpose to curb the ravages of the avaricious Moloch, several young men have joined the local volunteer fire department, sponsored by Chief Elmer Schulz. Among the well-known athletes who have thus far matriculated are Ted and Arthur Yates, of Rochester, N. Y., and Chris J. Dunphy, of Washington, D. C., three of the best known golfers there. Others who have joined the fire department are Sidney A. Smith of New York, dubbed "The Society Boxer"; Captain Byron Tate of the British army, and Ralph Cameron, husband of Anita Stewart.

Three Firemen Killed at Vincennes, Ind.

Three firemen, George Lane, chief electrician, Claude Woodall, and Fred Thompson, were instantly killed, and Chief Dan Decker was probably fatally injured while going to a fire in Vincennes, Ind., recently. The firemen were riding on a ladder truck when it was sideswiped by a Ford commercial truck. The three men were practically ground to pieces. The accident was one of the worst that has happened in that city in many years.

Charged Wire Kills Fireman

S. W. Davidson, a member of the fire department of Bluefield, W. Va., assigned to Station No. 1 was instantly killed when on Sunday, January 31, he came in contact with high voltage line while fighting a fire in a residence. The wire carried 2,300 volts. He is survived by a wife and two children.

West Endicott, N. Y., to Have New Station—Construction has started on a new fire station for West Endicott, N. Y. The new building which will be three stories high and made of brick and steel, is the gift of a local resident.

FIRE COMMISSIONER GLYNN RESIGNS; REJECT APPOINTEE; ANOTHER NAMED

Commissioner Glynn, Boston, Steps Down With Change of Administration—Mayor's Appointee Rejected by Civil Service Commission

FIRE Commissioner Theodore A. Glynn, of Boston, Mass., tendered his resignation to Mayor Malcolm E. Nichols in the following brief letter: "I respectfully submit herewith my resignation as Fire Commissioner of the city of Boston, to become effective at you honor's pleasure and convenience." Glynn's four-year term would not have expired until the first of August; but he submitted his resignation in accordance with custom because of the change in city administration. Glynn, himself, was a candidate for election as mayor, being defeated by Nichols.

Mayor Nichols selected John T. Hawes as successor to Glynn and expected that the Civil Service Commission would confirm the appointment. Mr. Hawes is chief field deputy in the internal revenue office in Boston, where he was associated with Mayor Nichols for four years. Hawes is 49 years of age and before entering the government service he was a street car conductor, Pullman railroad conductor, hotel clerk, and marine engineer. The civil service commission refused to confirm his appointment as fire commissioner, but gave no reasons for the rejection. Various rumors were circulated regarding the affair, one being that a newspaper story prematurely printed gave the impression that Hawes was sure of being fire commissioner and influenced the decision against him. Another suggested cause was his lack of administrative experience.

After expressing disappointment and surprise at the action of the commission, Mayor Nichols appointed Col. Thomas F. Sullivan, of the transit board, as acting fire commissioner.

Shortly after Col. Sullivan took over the office he announced that he intended to enforce strict discipline in the department and that he would act in all cases of violations of the rules. He stated that he would hear all cases himself and announced the abolishment of the trial board which was composed of officers and one private. A square deal and fair treatment were promised to all.

The appointment of the acting commissioner was announced to the department in the following General Order:

General Order No. 6—The following is published for the information and guidance of the members of the Fire Department:

1. "Mr. Thomas F. Sullivan, Chairman, Transit Commission, 1 Beacon Street, Boston, Mass.

"DEAR SIR: Under authority of Chapter 486, Acts of 1909, you are designated to be Acting Fire Commissioner in place of Theodore A. Glynn, resigned.

"You are hereby notified that under the same authority your designation as Acting Fire Commissioner shall begin at 6 o'clock p. m., Jan. 26, 1926.

"Very truly yours,
"MALCOM E. NICHOLS,
"Mayor."

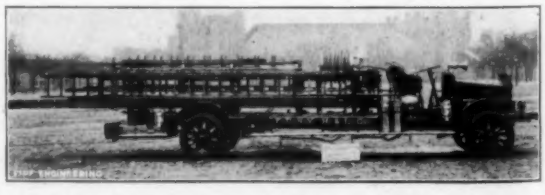
2. In accordance with the above I hereby assume command of the Fire Department.

"THOMAS F. SULLIVAN,
"Acting Fire Commissioner."

During the term of Theodore A. Glynn as fire commissioner the motorization of the Boston Fire Department was completed, The new fire alarm central station in The Fenway was built, a number of fire houses were rebuilt, and the 2 platoon system was installed in the department.

In a final official communication to the mayor, Mr. Glynn gave a summary of the present needs of the department. He recommended during the coming year the purchase of six motor pumping engines, 13 hose and chemical combination cars, three 85 ft. aerial ladder trucks, 6 city service ladder trucks, and eight tractors for ladder trucks.

HARRY BELKNAP.



Type of New Combination Ladder Company city service truck on a Pierce-Arrow chassis recently built for the fire department of New York City.

Morgantown, W. Va., Purchases Fire Apparatus—Morgantown, W. Va., recently purchased a Seagrave aerial ladder truck and a Seagrave Suburbanite pumper of 400-gallon capacity.

FOURTEEN PERSONS PERISH IN BLAZE IN OLD HOTEL

Lafayette Hotel, Formerly "Black Horse Inn," Allentown, Pa., of Stone and Brick, Yields to Flames—Burnings of Two Weeks

FIRE on January 23 destroyed the Lafayette Hotel in Allentown, Pa., and caused the death of fourteen persons. The building, which was a five-story structure, the three first stories built of stone and the two upper ones of brick, was discovered on fire at an early hour in the morning, by clerks in the office on the ground floor. The guests were at once notified, and an alarm sent in to fire headquarters. When the firemen reached the scene they found many guests hanging from windows on the fourth and fifth floors. The weather was near zero, and it was difficult to hoist ladders owing to the progress of the flames which were bursting out of the upper story windows. Nets were of little service, and many persons were killed or seriously hurt by dropping from the windows, or perished from exposure. The property loss was placed at $200,000.

The building was more than 115 years old, and was formerly known as the "Black Horse Inn." It was remodeled in 1909 and contained 100 rooms. Being of stone and brick the exterior was fairly fire-proof, but the interior was of inflammable material, and burned rapidly after the flames got hold. It happened that when the fire was discovered, many of the local firemen and some from out of town, were attending a function that had been given to the members of the Pioneer Fire Company,

Ruins of Lafayette Hotel, Allentown, Pa., in Which Fourteen Persons Were Burned to Death.

and were quickly on the spot following the alarm, giving rescue assistance pending the arrival of apparatus.

In describing the fire and the manner in which it was handled by the fire department, Chief William R. Kranzley writes as follows to FIRE ENGINEERING: "The building, which occupied about eighty feet street front, was in parts four and five stories high and built of stone and brick. The street width was 70 feet, affording fairly sufficient room for the department to work. The alarm was received at headquarters at 2:20 a. m., and the fire was practically extinguished at 5:50 a. m., after the interior of the building had been gutted. The fire protecting devices on the premises were meager, consisting of 1-quart carbon tetrachloride and soda dust type extinguishers. The hotel was provided with fire escapes, but flames prevented guests from reaching them.

"The department responded with two hook and ladder trucks, six pumpers and three chemical trucks. We had 24 paid men and a volunteer force at work. Upon our arrival we found the building enveloped in flames, with the weather nearly at zero. Eight fire hydrants were found available—six-inch double and triple—located about 240 feet apart, from which we obtained a pressure of about 80 pounds, and operated nine engine streams. The water main was of 12 inches, and we used 1½-inch nozzles. We had 2½-inch double jacket rubber-lined cotton hose, and obtained good results from the 80-pound pressure. Fortunately, the city is provided with a good water supply, which is obtained from a standpipe, fed from an inexhaustible source. The cause of the fire has not been determined, but an investigation is under way."

WHAT'S BURNING

From reports covering the United States and Canada, the estimated losses of fire during the week ending February 12, 1926, aggregated $6,361,200, as compared with $6,396,300 for the corresponding week in 1925. The total is derived by adding to the amount in the list given, which includes only those of $15,000 loss and over, a sum equal to twenty per cent of that amount, statistics showing that the smaller fires average about that proportion of the larger. Losses for the week ending February 5, follow in their right order.

The figures published in this list, compiled from telegraphic reports of fires occurring during the weeks, are based on estimates made at the time, which are necessarily hurried and are subject to latter investigation and consequent correction. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

ALTAVISTA, VA.—Baptist Church destroyed..... 15
BAYONNE, N. J.—Frame dwelling at 91 W. 18th street destroyed 15
HONEOYE FALLS, N. Y.—Plant of A. E. Britten Company destroyed 45
LITTLE ROCK, ARK.—Plant of International Harvester Company 195
CHICAGO, ILL.—Paint store of E. T. Carlson & Sons, N. Crawford avenue 70
SHELDAHL, IOWA—Two garages and a harness shop..... 15
CHICAGO, ILL.—Plant of Gitz Brothers Mfg. Company..... 195
OAKLAND, CALIF.—Piggly Wiggly store and adjoining property 70
CLEVELAND, OHIO—Kelly Hotel, Woodland avenue..... 95
NEW ORLEANS, LA.—Property at 401-403 Rampart street.... 75
SAN FRANCISCO, CALIF.—Bohemian Club..... 95
PIQUA, OHIO—Two fires in Bell block..... 15
HELENA, MONT.—Montana Odd Fellows' Home destroyed.... 20

* * * *

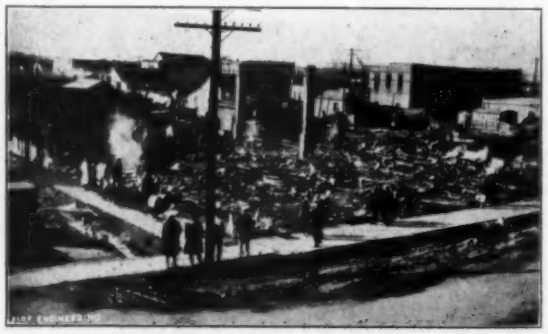
SAGINAW, MICH.—St. Joseph's Catholic Church..... 25
DEL RIO, TEX.—Barn on Moore estate..... 15
VINCENNES, IND.—Quarter block in downtown district..... 295
EASTON, PA.—Automobile accessories store on S. 3rd street.. 120
FRAMINGHAM, MASS.—Grace Congregational Church destroyed 95
OTTUMWA, IOWA—Nash-Finch Produce Company, 226 Commercial street 60
OTTAWA, ILL.—Storage building of Certain-teed Products Corporation 25
BROOKLINE, MASS.—Residence of Homer Albers, 55 Irving street 15
SOMERVILLE, MASS.—Buildings on Columbia street and Webster avenue 20
CANBY, MINN.—St. Peter's Catholic Church destroyed..... 15
SAULT STE. MARIE, ONT.—Cliffe Book Store building destroyed 20
DALLAS, TEX.—Plant of Love Field Pottery Company, Love Field 45
TYLER, TEX.—W. O. Lyle's bakery destroyed, adjoining property damaged 20
RICHMOND, VA.—Grove Avenue Baptist Church destroyed .. 95
STAUNTON, VA.—Skinner Building 15
WOBURN, MASS.—Dorin Building 95
SOMERVILLE, MASS.—Parish house of Universalist Church destroyed 20
LULING, LA.—Sugar mill of Ellington Sugars, Inc., destroyed 295
NORTH BALTIMORE, MD.—High School Building destroyed 145
MOIRA, N. Y.—Eddie business block 45
KALAMAZOO, MICH.—Chase Block at Main and Rose streets 100
DULUTH, MINN.—Building housing two business concerns destroyed 25
CHICAGO, ILL.—Business building at Michigan Blvd. & Grant Park 105
ROXBURY, MASS.—Plant of A. J. Tower Company, Vernon & Simmons streets 25
WASHINGTON, D. C. (Bolling Field)—Hanger and 9 airplanes destroyed 395
STATESBORO, GA.—Machine Shops of Savannah & Statesboro, R. R. 20
EUREKA, ILL.—Building occupied by Citron Department Store destroyed 20
FEDERALSBURG, MD.—Four business establishments including post office 20
PASSAIC, N. J.—3-story warehouse of Manhattan Furniture Company 95
MAMARONECK, N. Y.—Hewitt Mansion at Oriental Point destroyed 195
GEORGETOWN, OHIO.—Biehn Hotel and adjoining property 95
ABBOTSFORD, WISC.—Abbotsford Hotel and opera house destroyed 15
LAWRENCE, MASS.—3-story block destroyed 120
SYRACUSE, N. Y.—The Villa, a roadhouse owned by John M. Tobin 45
PLAINFIELD, N. J.—Building occupied by National Pharmacy 45
TERRE HAUTE, IND.—Anchor Printing Company, Wabash avenue 25
NORTH PELHAM, N. Y.—Store and apartment owned by Louis Bloom 45
HONEOYE FALLS, N. Y.—Factory of L. A. Rittenhouse Electrical Company destroyed 45
PROVIDENCE, R. I.—St. James Episcopal Church 15
CELERON, N. Y.—Ice storage plant of O. T. Cree destroyed .. 15
FORT WAYNE, IND.—Two business houses in downtown district 120
PLAINVIEW, TEX.—Harvest Queen Mill and Elevator destroyed 70

* The first 13 fires in this column were included in the totals of the previous week.

CHAMPAIGN, ILL.—Store of Bailey & Hines, University district 95
LEXINGTON, KY.—Supply room and assembly hall of Troop C destroyed 35
ALLEGAN, MICH.—Foster Company building 60
SEDALIA, MO.—Sedalia Printing Company 20
ST. JOHN, N. B.—Two business and residence buildings, Union street 60
ZANESVILLE, OHIO.—Garage of Zanesville Motor Sales Company 95
NEWPORT, VT.—Interior of brick building on Main street destroyed 95
MONTREAL, CANADA.—Miller's Cloak & Dress Company factory 70
NEW BRUNSWICK, N. J.—Pine Tree Inn on Green Brook Road destroyed 15
BOSTON, MASS.—Rectory of St. Thomas Aquinas Church destroyed 15
GARY, IND.—Minas Furniture Store 95
LAWLER, IOWA.—Public school building 15
PERU, IND.—Hugh McCaffrey building, downtown district 55
WATERBURY, Conn.—Waterbury Fastner Company and adjoining property 145
CINCINNATI, OHIO.—Franklin School, 2833 May street destroyed 95
SYRACUSE, N. Y.—Church of St. Mary of Skaneateles destroyed 55
ALBANY, N. Y.—Calvary Baptist Church on State street destroyed 145
UNIONTOWN, PA.—Two residences in village of High House 15
HENNING, MINN.—Meat market and general store destroyed 15
LAWRENCE, MASS.—Business block at 70 South Broadway 70
WEST MEMPHIS, ARK.—Three-story hotel 70
CHICAGO, ILL.—Wilson Avenue bathing pavilion 25
DAYTON, OHIO.—Several buildings at Wilbur Wright Air Field 240
CHICAGO, ILL.—M. V. Klich Printing Company 245
CLEVELAND, OHIO.—Pearl Road M. E. Church, Pearl road and Memphis avenue 70
PLAISTOW, N. H.—W. H. Butler Shoe Factory destroyed 20
CHICAGO, ILL.—Columbus Park Garage 195
TARENTUM, PA.—Star theatre 15
WANAKENA, N. Y.—School Building 15

From reports covering the United States and Canada, the estimated losses of Fire in the week ending February 19, 1926 aggregated $7,284,000, as compared with $7,648,650 for the corresponding week in 1925:

OMAHA, NEBR.—J. R. Phipps' Shoe Repairing Company 25
SYRACUSE, N. Y.—Villa Roadhouse 45
NEW CASTLE, PA.—Masonic Temple partially destroyed 70
PERKASIE, PA.—Muth garage destroyed 35
QUEBEC, QUE., CANADA.—Belmont Retreat on Ste. Foy Road. 45
WEST HAMLIN, W VA.—Entire block of business houses and dwellings destroyed 70
WEST PALM BEACH, FLA.—Bungalow at Palm Beach 45
GREENWOOD, N. Y.—Garage and blacksmith shop destroyed .. 15
CLINTON, MASS.—Morse business block 20
SALAMANCA, N. Y.—Strand Theatre and J. E. Wells garage destroyed 115
AUDUBON, N. J.—Plant of A. H. Knoettner Sons & Company destroyed 95
DALLAS, TEXAS.—Three dormitories of Southern Methodist University 145
WINDSOR MILLS, CANADA.—Eight business houses and five dwellings, also smaller buildings 220
MOBILE, ALA.—Several business houses in wholesale district 245
LOS ANGELES, CAL.—Plant of Beacon Auto Works, South Hill street 45
GIFFORD, IDAHO.—Two business establishments 20
HARROGATE, TENN.—Mill and equipment of Shoffner Milling Company 35
MIAMI, FLA.—Warehouse of McDonald Lumber Company destroyed 495
LEXINGTON, KY.—Stock barn of Calumet Farm destroyed 140
SKANEATELES, N. Y.—St. Mary of the Lake Catholic Church destroyed 50
ALLENTOWN, PA.—Garage owned by Herbert Muth 15
COREY, PA.—Cornell Gasoline Filling Station destroyed 15
HUNLOCK CREEK, PA.—Farm residence and barn of J. Templeton 15
MOSCOW, OHIO.—Kinsey-Johnson Company factory destroyed. 15
WEIRTON, W. VA.—Five dwellings and hotel 45
TAMPA, FLA.—Hyde Park and Grand Central avenue property —total 55
PORT WENTWORTH, GA.—Storage warehouse of Savannah Sugar Refining Corp. 95
SCALES MOUND, ILL.—Garage and lighting plant destroyed. 15
DRAKESBORO, KY.—High school building 15
SOUTH BEND, IND.—Fisher Twin City Used Car Market destroyed 20
WORCESTER, MASS.—Building at 121-129 Water street 15
CLINTON, MASS.—Store of Wm. H. Ryder, Morse Building, High street 20
STANDISH, MICH.—Several business houses on Main street .. 95
PERRY, MICH.—Consolidated school building destroyed 15
MINNEAPOLIS, Minn.—Grain elevator operated by Northern Milling Company 145
SLAYTON, MINN.—State Bank of Slayton destroyed 15
BUFFALO, N. Y.—Four-story building, 178 Ellicott street 145
FLASHER, N. D.—Sawtelle & Stowall dairy farm, north, destroyed 15
OKLAHOMA CITY, OKLA.—Building of N. A. Kennedy Supply Company 95
NEW KENSINGTON, PA.—Edelson Department store, Ninth street 55
DALLAS, TEXAS.—Building at 517 Jackson street 45
DAVENPORT, IOWA.—Plant of Western Flour Company 195
DURKET, IND.—Business section practically destroyed 70
COPPER HILL, ARIZ.—Two-story warehouse of Superior & Boston Mining Company destroyed 20
ELLSWORTH, ME.—Brown Building owned by Dr. D. E. Brown, Main street 15
ST. JOHN, N. B.—Building of F. W. Daniel & Company Ltd.. 145
DAYTON, OHIO.—Buildings in business district 490
DALLAS, TEXAS.—Building at 1304 Young street 95
JACKSONVILLE, FLA.—Warehouse of Carolina-Portland Cement Company 140
NEW ORLEANS, LA.—Factory occupied by Kaufman-Mathews Company 45
IOWA CITY, IOWA.—Residence on Frank Pytbil farm, 4 miles east 15
LOUISVILLE, KY.—Plant of Charles Stoecker Tanning Company destroyed 95
AMESBURY, MASS.—St. Joseph's Parochial School destroyed 45
BIRMINGHAM, MICH.—Home of George Weinbrenner on Quarton Road, west 25
MINNEAPOLIS, MINN.—Sons of Norway Hall, 2335 Central Avenue 40
KEW GARDENS, N. Y.—Entire business block destroyed, Queens Boulevard Section 195
IXONIA, WISC.—St. Paul's Lathern Church, one mile north, destroyed 30
SPRINGFIELD, MASS.—Radio plant of Alden Manufacturing Company 25
PITTSBURGH, PA.—Building housing Kennedy Tailoring Company 95
McCORDSVILLE, IND.—Consolidated High School, Vernon Township 95
PARIS, TENN.—Planing Mill of Louisville & Nashville R. R. 45
WOBURN, MASS.—Gorin building containing stores and apartments 95
ANDERSON, ALA.—Nine stores and garage in business district 45
DE LAND, FLA.—De Land Steam Laundry destroyed 25
POTSDAM, N. Y.—Hewitt Pulp Mills owned by Raquette River Paper Co. 75
HAZARDVILLE, CONN.—Steane-Hartman Tobacco Warehouse destroyed 95
BISCO, N. C.—Home of Robert N. Page destroyed 15
KEARNEY, N. J.—Main building of McKinley School 20
PHILADELPHIA, PA.—Factory of American Macaroni Company destroyed 95
NEW KENSINGTON, PA.—Large apartment building destroyed 60
CINCINNATI, OHIO.—Neur Glass Company factory 92
PITTSBURGH, PA.—Excel Wiping Material Company, 177 Devilliers St. 95
CHICAGO, ILL.—Tower Court Apartments 50
CLARION, MICH.—Business district 35
OZARK, ARK.—Eight business establishments 145
PORT ARTHUR, ONT. CANADA—Two business houses on Main Street 45
BRAMPTON, ONT. CANADA—Brampton Milling Company, A. H. Belfour, owner 15
LUBBOCK, TEXAS.—Davis Gin Mill 30
KETCHIKAN, ALASKA—Two hotels and adjoining property .. 95
PASSAIC, N. J.—Three business houses—698-700 Main Avenue 95
BRADEVELT, N. J.—Two barns on farm of Charles Johnson destroyed 20
EAST HARTFORD, CONN.—Le Bal Tabarin Dance Hall. 60



Eight Burned to Death in Ferriday, La., Fire

Ruins of the big blaze at Ferriday, La., in the early morning hours of January 12. The fire swept an entire block of the city, destroying hotels, stores and residences, and causing nearly a million dollars' loss. The majority of those burned to death were traveling men from other parts of the country, who were caught in the hotels, and burned before they could escape.

History Repeats Itself in Fire Accidents

A resident of Madison S. D., who used a lighted match to see if the radiator had a sufficient amount of water, was painfully burnt about the hands and face when he removed the radiator cap. The radiator contained alcohol to prevent the water from freezing, and when the alcohol fumes came in contact with the naked flame of the match, an explosion occurred.

An electric iron which was placed in the bed to warm the occupant's feet resulted in setting fire to the bed clothes. It is now said that the victim has "cold feet" whenever the plan of a bed warmer is mentioned. History as far as these odd fire causes will repeat itself—there will always be some one who will unthinkingly repeat the selfsame mistake.

Ripley, Mich., Elects New Chief—William Grosnick was elected fire chief at Ripley, Mich., January 1st. Casper Haller is assistant chief.

Kiel, Wis., Has New Truck—The new fire apparatus recently bought by Kiel, Wis., has been placed in service. Herman Roethel is chief of the department.

DIRECTORS DISCUSS PLANS FOR NEW ENGLAND CHIEF'S CONVENTION

Draw Up Tentative Program—Prominent Chiefs to be Invited to Speak—Design for Badges Approved

THE Board of Directors and State Vice-Presidents of the New England Association of Fire Chiefs field a meeting on February 11 at Alden Park Manor in Brookline, Mass., to discuss plans for the next convention of the organization, which will be held in Manchester, N. H., on June 22, 23 and 24.

The meeting was preceded by a luncheon and tour of inspection of the buildings of the manor. Chief Daniel E. Johnson, of Bridgeport, Conn., president of the association, directed the meeting and was assisted by the secretary, Chief John W. O'Hearn, of Watertown.

The others attending were Fire Commissioner Willard W. Estabrook, and Chief Selden R. Allen, of Brookline; Chief William C. Shepard, of Pittsfield, Mass.; Chief Carl D. Stockwell, of Burlington, Vt.; Chief James E. Smith, of Nashua, N. H.; Chief Charles H. French, of Manchester, N. H.; Chief Arthur W. Spring, of Laconia, N. H.; Chief Oliver T. Sanborn, of Portland, Me., and Chief Robert Browning, of Central Falls, R. I.

A tentative program was drawn up for the convention, and it was voted to invite Chief John Kenlon, of New York City, and Chief Evans, of New Orleans, La., to attend and deliver addresses.

Chief Shepard, Chief French, and Chief Spring were appointed as a memorial committee to draw up suitable resolutions to be read at the convention relating to the late Chiefs Fifield and Chase, who died during the year.

Upon motion by Chief Spring, seconded by Chief Browning, it was voted to invite the New Hampshire Police Chiefs' Association to attend the convention.

A design for convention badges was presented by Chief French and was approved.

Secretary O'Hearn reported that the association was in sound financial condition and the membership steadily increasing.

Upon suggestion of President Johnson it was decided to allow ample time at the convention for a "question box" and round table discussion.

Plans were outlined for securing a number of prominent speakers, each of whom is an authority in his particular line. Topics of vital interest to fire department heads throughout the country will be taken up and a very attractive program of events is being arranged.

Headquarters will be established in the Hotel Carpenter, and the exhibition of fire apparatus and accessories will be held in the New Hampshire State Armory, which is less than two blocks distant from the hotel.

HARRY BELKNAP.

Exhibit Committee Plans on Big Display at Convention

The Exhibit Committee of the New England Association of Fire Chiefs has issued a circular letter to manufacturers of Fire apparatus and equipment, in which it urges them to make the exhibit at the coming convention of the association the best ever shown. The exhibits are to be staged in the State armory. The committee is headed by Chief Henry H. Heitman, as chairman, and consists of the following members: Chiefs William C. Greene, Frank Charlesworth, Chief Arthur Montmeny and Roy K. Small.

Chicago Has Hard Fight in Zero Weather

Chicago firemen will long remember the night of January 28, 1926, as one of the most trying nights in the memory of the oldest fire fighters. With the temperature below zero, six fires broke out between 10 p. m. and 4 a. m., for which two or more alarms were sounded. For the six extra-alarm fires, a total of 116 companies were required, though several of these companies fought at two of the fires, moving from one to the other as required. Thirty-six companies were called out to fight a blaze in a building used for light manufacturing.

Fire Marshal Seyferlich was kept constantly on the jump from one fire to the other. Deputy Fire Marshal McAuliff, who was off duty, rushed back and began directing the men and apparatus to the most advantageous positions as conditions required. Second Deputy Pat Egan, who was on duty at engine 104, raced across town several times to aid Seyferlich and McAuliff in their efforts to prevent a conflagration. Officers and men were highly commended by fire insurance officials for the manner in which they handled the situation.

Two Big Fires in Haverhill, Mass.

Two serious fires took place in Haverhill, Mass., recently. While all available apparatus was busy fighting a general alarm fire in the Academy of Music Building at Nos. 95-109 Merrimac Street flames broke out in the plant of the Roberts and Dube Shoe Company on Hillside Avenue.

The first fire was discovered by a night watchman and originated in a rest room in the theatre building which is a 3 story brick structure occupied by stores and offices as well as by the theatre. The flames spread through the walls and a cockloft, giving the firemen a hard battle.

The Academy of Music Building was built in 1883 and was one of the first large office structures erected on Merrimac Street. The theatre section is in the rear of the office building. On either side are three story tenement blocks. The theatre has twice before been destroyed by fire, in 1889 and in 1912, and each time was rebuilt. The last fire, however, was the only one to sweep through the office building.

Shortly after 3 a. m. Clarence Vine, night watchman, smelled smoke and upon investigating discovered a lively blaze in the women's rest room on the second floor of the front building. He immediately sounded an alarm from Box 13 on Merrimac Street and upon arrival of the apparatus Chief W. H. Hawkins at once ordered a second alarm. This summoned all available equipment and the off duty platoon of firemen. The Merrimac Street Building is connected with theatre proper in the rear by a 20 ft. corridor. Three streams of water used as a spray curtain saved the theatre.

Three firemen were overcome when gas pipes burned away. A dozen other firemen working under District Chief R. H. Crittenden had a narrow escape from injury when a section of the roof collapsed.

At 8 a. m. while the firemen were still at work upon this fire an alarm was received from Box 516 for a blaze in the one story frame factory of the Roberts and Dube Shoe Company on Hillside Avenue. Apparatus was sent from the Merrimac Street fire and had a run of nearly two miles to the scene of the second blaze which is thought to have started in the boiler room. The long frame structure was enveloped in flames by the time the department reached the scene and got into operation. The plant of the Bailey Wood Heel Company and several residences were threatened for a time and were wet down by hose streams. The combined losses by the two fires were variously estimated in the newspapers from $135,000 to $250,000. The scene of the Merrimac Street Fire was only a hundred yards distant from the Taylor and Saltonstall Blocks which were burned in a general alarm fire three weeks previous.

Fighting Two Fires at One Time

For a small fire department to cope with two fires in different parts of the town at the same time requires ambidexterity. Chief Oliver T. Sanborn, of the Portland, Me., fire department, relates how his men managed a situation of this kind not long ago, as follows:

"The first alarm called the department to the Portland Bridge and Coal pockets. A still alarm was received at 3:05 p.m., followed by a box alarm a minute later. At 3:22 a special call was sent in for additional apparatus, and at 3:37 a third alarm was sent in. This called into service Engine No. 7 (fireboat) with a pumping capacity of 1,500 gallons, a 750-gallon Seagrave, a 1,000-gallon Seagrave, and a 750-gallon American-La France; also 3 hose companies, three truck companies and a chemical company.

"At 4:20 p. m. a box was sounded for a serious fire at a large wooden two-story wood manufacturing plant. This was followed at 4:34 p. m. by a second alarm, which called into service all our apparatus, including that in reserve, as follows: Three 800-gallon steam engines, a 1,000-gallon steam engine, three hose companies and two truck companies. A call was made on South Portland, which was responded to with a 1,000-gallon Ahrens-Fox and two hose companies. The town of Cape Elizabeth also sent to our aid two hose companies and a chemical. It was a strenuous battle, but we kept the flames within reasonable limits. The total loss caused by the two fires amounted to approximately $100,000.

Fire Destroys Old Schooner

The six-masted schooner, Edward J. Lawrence, was destroyed by fire in the Portland, Me., harbor recently. Crews of the city fireboats, the U. S. Coast Guard cutters and other fire apparatus, failed to check the flames, which evidently started in the boiler room and swept the craft fore and aft. The vessel was built in Bath, Me., in 1908, and was of 3,350 gross tonnage. She had been lying in the harbor for three years because of failure to obtain a cargo that would pay for operation. The schooner was the last of the Atlantic three-masters.

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

FIRE PREVENTION AND BUILDING CONSTRUCTION

By RAYMOND T. NELSON,
Engineer, Western Actuarial Bureau, Chicago.

THIS fifth installment of the University of Illinois Course in Fire Prevention continues the instructive article on the above subject, a matter of interest to all who are engaged in fighting fire, and one on which much of the work of fire prevention must depend. If the building involved in a fire is well constructed, the work of the firemen is greatly reduced. Mr. Nelson's ideas are therefore of great interest and value to those engaged in fire extinguishment.

ROOF OPENINGS

Skylights

Skylights should be constructed of wire-glass set in metal frames or of heavy glass set in metal frames and protected by screens of No. 12 gauge wire with not more than one inch mesh supported on iron frames and set not less than 6 inches above the glass.

Note: Skylights over masonry elevator or stair shafts may be of thin glass set in metal frames and protected as described above (Plate 6).

Ventilators

Slatted or other ventilators in wall, roof houses, etc., should be protected by heavy screens of not more than one-fourth inch mesh or provided with windows or other effective means of preventing the access of sparks. (Plate 7).

Scuttle Holes

In buildings of ordinary construction, scuttle should be constructed of metal lath and plaster on angle iron frame, or double battened wood, tin clad on the outside, tin turning over lower edge.

Stair or permanent ladder should be provided. If ladder, it must be fastened to the scuttle and if hinged may be drawn up to ceiling. Rope ends should not be over six feet above floor. (Plate 8).

COURTS

Interior Courts

Definition: An interior court is any uncovered area within a building enclosed on all sides by walls of the enclosing building.

Requirements: Walls should be of cement plaster on both sides of metal lath, not less than 2 inches thick, supported on iron frames; gypsum blocks, tile or reinforced concrete, not less than 3 inches thick; or brick.

Openings into courts should be protected by wire-glass in stationary, automatic or self-closing metal frames, or by automatic doors or shutters approved for the protection of openings in vertical shaft.

Note: If court pierces only one floor (and roof) and is 20 feet or more in both dimensions, or if court pierces more than one floor (and roof) and is 40 feet or more in both dimensions, requirements as to the protection of openings may be waived. (Plate 9.)

Exterior Courts

Definition: An exterior court is any uncovered area within a building enclosed on all but one side by walls of the enclosing building. (Fig. 1.)

Note: The junction of two walls forming a re-entrant angle should not be considered as forming a court (Fig. 2) except in the case of small V-shaped courts (Fig. 3), which are included in the above definition.

Requirements: The same requirements that apply to exterior walls should apply to court walls. (See Masonry Walls, Plate 1.)

Openings: If court is enclosed on all sides by walls, either of the building of which the court forms a part or by walls of adjoining buildings, openings into court should be protected by wire glass in stationary, automatic or self-closing metal frames, or by automatic doors or shutters approved for the protection of openings in vertical shafts.

Note: If court, enclosed on all sides, pierces only one floor (and roof) and is 20 feet or more in both dimensions, or if court pierces more than one floor (and roof) and is 40 feet or more in both dimensions, requirements as to the protection of openings may be waived. (Plate 10.)

FLOORS, ROOFS AND SUPPORTS

Fireproof Floors and Roofs

Definitions: Fireproof floors or roofs are floors or roofs constructed of brick or tile arches, reinforced concrete slabs, reinforced concrete slabs with reinforced concret joists, or reinforced concrete joists and tile on incombustible supports.

Note 1: Combustible floor surfacing does not affect the grading of a floor, except that when earth or other fireproof floors laid directly on earth have combustible floor surfacing with air space beneath, they should class as combustible floors.

Requirements: Floors, if brick or concrete, should be not less than 4 inches thick, or if tile, not less than inches thick. Wood floor surfacing, if any, should be laid on nailing strips embedded in incombustible materials with no air space beneath.

Floor Supports should be of materials other than stone, concrete (not reinforced) hollow concrete block or tile, and unprotected steel.

If supporting columns, girders, trusses and beams are steel or reinforced concrete, or if floor and roof slabs are reinforced concrete, all steel work and reinforcing bars should be protected according to the following minimum requirements:

Material: Only brick, concrete, burned tile or other materials, which, upon test, show equal value, should be considered as fireproofing; thickness of plaster should not be considered in determining the thickness of fireproofing.

Thickness of Fireproofing; Metal Supporting Members; Columns; Columns built in or supporting exterior walls, 4 inches.

Note 2: When fireproofing consists of reinforced concrete, thickness may be reduced to 3 inches. Interior Columns, 3 inches.

Note 3: Interior columns, constructed of steel or wrought iron pipe filled solidly with concrete may be protected by a minimum of 1½ inches of fireproofing.

Horizontal Supporting members: Girders and all members of trusses, built in or supporting exterior walls; on sides, 4 inches; over top and bottom plates and flanges, 2 inches.

Note 4: When fireproofing consists of reinforced concrete, required thickness of fireproofing on sides may be reduced to 3 inches. Interior girders, trusses, beams and other supporting members not built in or supporting exterior walls; on sides and over top and bottom plates and flanges, 2 inches.

Reinforced Concrete Supporting Members and Floor or Roof Slabs: All metal reinforcing in reinforced concrete columns, girders, beams or other supporting members should be protected by not less than 1 inch of concrete or its equivalent.

All metal reinforcing in floor or roof slabs should be protected by not less than ¾ inch of concrete or its equivalent. (Plate 11).

Incombustible Floors and Roofs.

Definition: Incombustible floors and roofs are floors and roofs constructed of asbestos board, glass, metal, metal lath and plaster, concrete on expanded metal; or clay, concrete or gypsum tile on metal ties or purlins; on incombustible supports.

Floors or roofs constructed of concrete on expanded metal with all supporting columns, beams or girders protected by fireproofing materials equivalent to not less than one-half of that

(*Continued on page* 210)

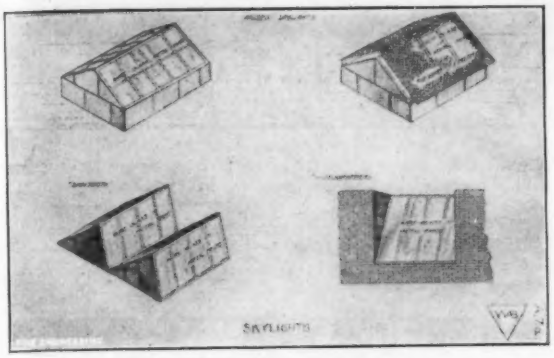


Plate 6. Skylights.

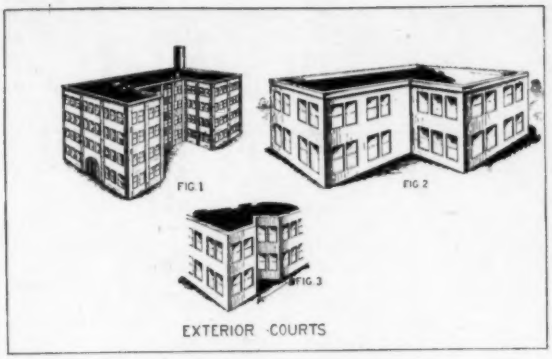


Plate 10. Exterior Courts.

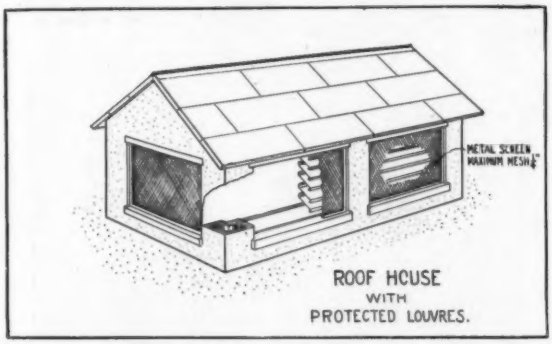


Plate 7. Roof House with Protected Louvres.

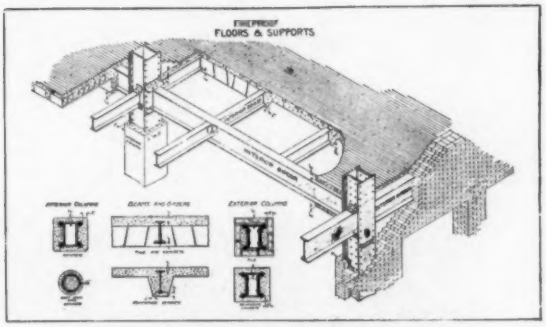


Plate 11. Fireproof Floors and Supports.

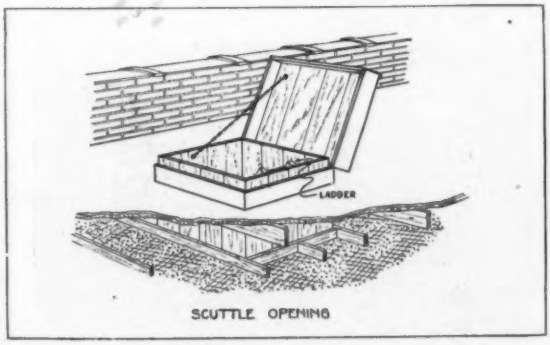


Plate 8. Scuttle Opening.

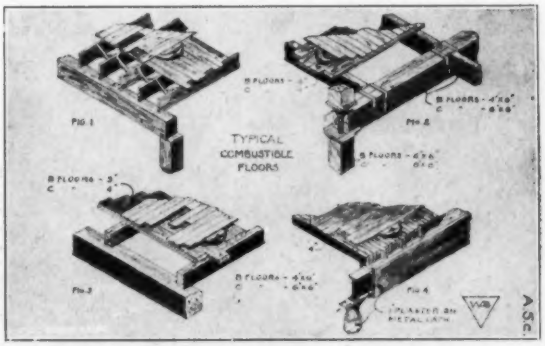


Fig. 12. Typical Combustible Floors.

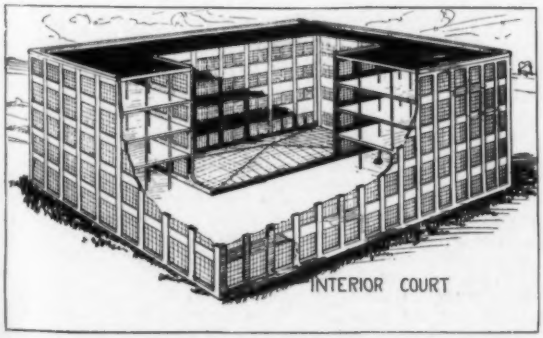


Plate 9. Interior Court.

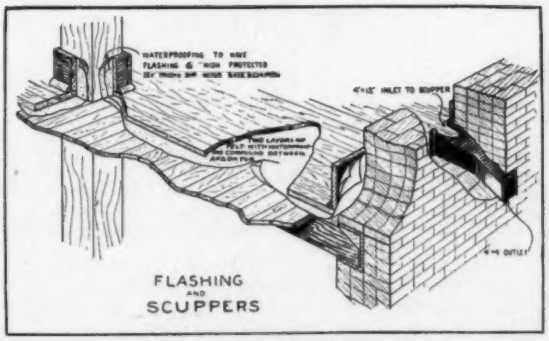


Fig. 13. Flashing and Scuppers.

Structural Details of Importance in Fire Prevention, as Illustrated in University of Illinois Fire Protection Course.

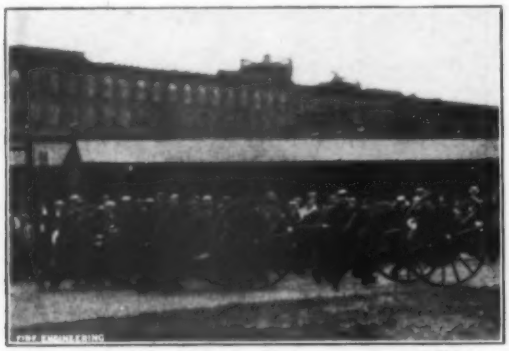
INDUSTRIAL PLANT PROTECTION

A Fire Brigade Field Day

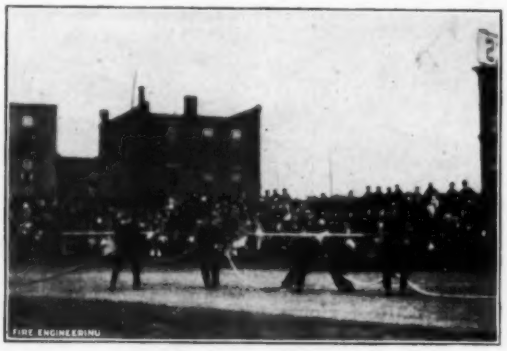
Nothing is well done without enthusiasm. In all organizations, a friendly rivalry between individual members and among the various units is an excellent stimulus. The wise management seeks to encourage this state of mind.

A fine appreciation of this point led the Singer Manufacturing Company at Elizabethport, N. J., many years ago, to institute an annual field day for their factory fire department. Since 1911, the events arranged for these occasions have stimulated a degree of interest among its members that has resulted in an excellently trained and highly efficient fire fighting organization.

Eight companies of six men each, under the leadership of Mr. Walter Gorgin, formerly a captain of the New York Fire Department, contend among themselves for the honor of winning the Championship Trophy, which is awarded to the company securing the greatest number of points in four competitive events. A point system of scoring is in use, the winning company of each event receiving three points, the second two points, and the third one point. In addition to the Championship Trophy, which this year was won by Company 5, there are individual prizes for each event. The awarding of gold badges to members of the brigade who have served ten years continuously in the department is still another feature of their Field Day.



Hose Reel Race.



Hose Coupling Contest.

Chemical Engine Contest.

Ladder Contest.

Races and Contests at the Annual Field Day of the Factory Fire Department, Singer Manufacturing Company.

The competitive events, with this year's winners, are as follows: First Event—Hand Extinguisher Contest.

Two men from each company, one to carry a two and one-half gallon extinguisher, the other man an axe, run fifty feet, mount ladder to roof, cut hole in box, lay chemical inside of box. Won by Company 7. Time, 10 4/5 seconds.

Second Event—Company Ladder Contest.

Companies run 100 feet, erect a 22-foot ladder against building, first man mounts to roof. Won by Company 7. Time 11 1/5 seconds.

Third Event—Chemical Engine Contest.

Each company to run 300 feet over an angular course with chemical engine, discharge contents and wet flag. Won by Company 5. Time, 18 1/5 seconds.

Fourth Event—Company Run.

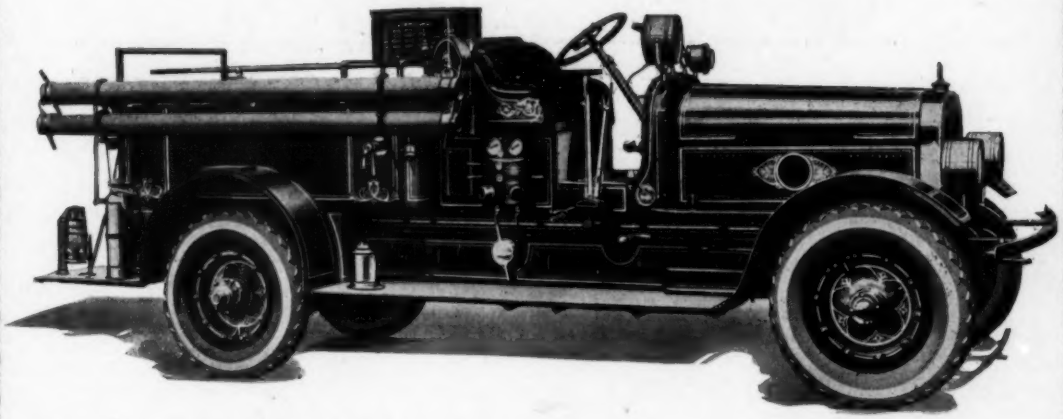
Each company to run 300 feet with hose cart, detach one length of hose, connect to hydrant, attach nozzle, turn on water and wet signal flag. Won by Company 5. Time 27 3/5 seconds.

The remaining two events are non-competitive. For one of these, four companies together stretch 400 feet of hose and get stream in action. Time, 57 3/5 seconds. For the other, the remaining four companies run 200 feet with four lengths of hose, attach hose to hydrant, run to platform, mount ladder to roof, and get stream in action. Time, 42 2/ seconds.

The admirable efficiency of the department in fire-prevention work is reflected in the annual report submitted to the management by the Fire Chief. This report indicates that during the year 1924 there were nineteen fires in factory and yard. Five of these occurred at night, and were discovered and extinguished by the watchman. The other fourteen occurred during the day; of these only four necessitated sounding the private fire alarm, and at only two of these fires were the service of the brigade really needed. These fires did little or no damage, except one which involved a loss of about $2000 in the muslin-covered screens of a dust collector. This is stated to be the largest single loss from fire this factory has experienced in the past ten years. During the year, forty-one violations of fire rules were dis-

(*Continued on page* 210)

The Latest—



Let Your Next One Be A Seagrave

More and more Fire Chiefs have come to realize that the latest thing in a

SEAGRAVE

means the last word in Motor Fire Apparatus

"Let Your Next One be a Seagrave"

is a slogan based upon sound considerations of economy—judged by *proven performance.*

THE SEAGRAVE CORPORATION

Columbus, Ohio, and Branch Offices at

Boston, Mass. Philadelphia, Pa. Kansas City, Mo. Los Angeles, Calif.
New Haven, Conn. Chicago, Ill. Pittsburgh, Pa. San Francisco, Calif.
Dallas, Texas Seattle, Wash. Birmingham, Ala.

Another Mack Protected Community —Roosevelt, Long Island

Mack Fire Apparatus

The progressive village of Roosevelt, L. I., has recently added these two Macks with chemical tanks and hose to master a small blaze promptly and with water pumping capacity to quickly extinguish a fire that has gained headway. With ladders and tools for rescue and salvage work, they constitute a complete two-piece fire department.

Mack Fire Apparatus includes units for every fire-fighting purpose—for standard and special uses by the largest fire departments, and combination units designed for small town and rural service where dependence must be placed on one or two pieces of apparatus.

New York's fire department has over a hundred and fifty pieces of Mack motorized equipment—hose wagons, rescue cars, water towers, Mack-propelled steam pumps—all kinds of fire apparatus of standard and special design. Many other large cities and scores of small towns and villages depend on Mack.

MACK TRUCKS, Inc.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

Fire Apparatus, Trucks, Buses, Rail Cars

One hundred direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," and "MACK TRUCKS OF CANADA, LTD."

Before you buy new equipment, write for Catalog illustrating and describing the complete line of Mack Fire Apparatus.

PERFORMANCE COUNTS

"Shuredry" Salvage Covers

COST LESS—
WEIGH LESS—
MORE EASILY HANDLED

Chief Boyd, of the Knoxville, Tenn., Fire Department, has used "Shuredry" Salvage Covers for eight years. He says: "They are *waterproof, not affected by the weather, easy to handle, and altogether the most satisfactory covers we have ever used.*"

They do not freeze in winter, nor become tacky in summer. They are not subject to spontaneous combustion, nor to cracking where folded. One man can carry four up a ladder at one time.

Made in standard sizes. Write our nearest plant for samples and prices.

FULTON BAG & COTTON MILLS
Manufacturers since 1870
Atlanta, New Orleans, Brooklyn, St. Louis, Dallas, Minneapolis

Do what This Chief Did

A well-known Fire Chief of one of our large cities specified Signal Two Collar Shirt, number 25, for his entire department.

With all the men wearing the same style and kind of shirt the department is now absolutely uniform, and the Chief and his men take pride in their appearance.

This Signal Shirt is long-wearing, dressy and practical. The two collars save wear and washing.

Signal Shirt Company
Racine, Wisconsin

Signal

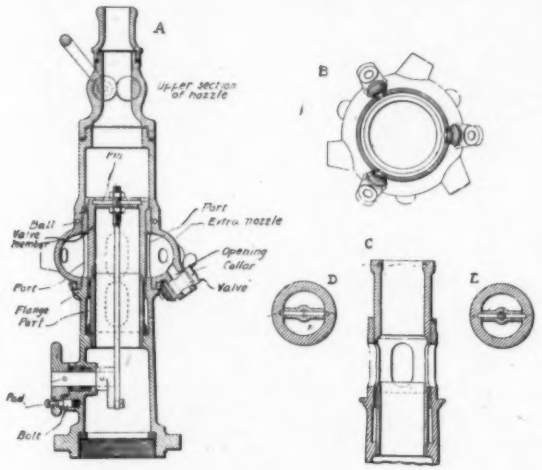
Recent Patents

Descriptions of Patents Recently Issued of Interest to Fire Departments—New Nozzle—Non-Freezing Fire Extinguisher

Fire-Hose Nozzle

A patent (No. 1,500,633) has been granted to William J. Marshall, of East Boston, Mass., for a design of fire nozzle which in addition to discharging the usual fire stream, can discharge a number of smaller streams and a stream backwards for the proctection of the hose man from the heat of the fire.

Figure A shows a longitudonal section of the nozzle, B represents an inverted plan of the revoluble hollow member for discharging a plurality of streams in various directions, C is a vertical section of a portion of the casing with the slidable valve therein for closing the lateral ports in said casing, D is a horizontal section taken along the dotted line at the top of C. The view at E is a similar view with the pins disposed in sockets in the inner face of the valve member.



The main stream is discharged in the upper section of the nozzle which may be screwed on to the main section by means of a thread as shown. An extra nozzle member is provided which may be used in conjunction or independently of the main nozzle.

The additional member is revolubly mounted upon the main casing opposite to a number of lateral ports. The extra nozzle member has a number of discharge ports each extending at a different angle.

The inner end of the extension and the outer coating of the extra nozzle are provided with annular raceways in which are disposed a number of anti-friction balls. When the stream is discharged, the water issuing from the number of extra ports will cause the nozzle to rotate on the ball bearings, thereby throwing the stream in all directions.

The downward projection to the right of A has an opening as shown, and a collar to which is attached the rotatable valve which may be moved about its axis to close the opening. When one of the ports are opened, all other valves will open simultaneously, and likewise by closing one of the valves, all of the valves are closed. Similarly the openings may be so adjusted as to have a full side stream or a throttled stream.

When the boseman is subjected to an intense heat while fighting a fire at close range, the valve is opened so that a stream will play on the hoseman to cool the area in his vicinity. These same valves can be opened when the nozzle is lowered to fight a cellar fire. Where a stream is to be used at a long range, all of the extra nozzle members are closed and the water is discharged through the port of the upper section of the nozzle.

When the valve member is moved outwardly, it brings the lower port on that side opposite the upper port. In the inner face of the valve member and near the outer end are the oppositely disposed sockets adapted to receive the ends of the pins slidably mounted on the cross bar and extending diametrically to the bore of the valve.

The threaded end of the bar extending vertically has clamp nuts by which it may be clamped to the cross bar when properly positioned. When thus assembled, the cross bar may be oscillated freely about the axis of said pins.

Should it be desired to open the valve member on the left, the operator presses the pad which releases the bolt as shown from the depression so that the disk may be rotated about the axis of the crank, thus moving it into a position diametrically opposite to the one shown, and through the rod, moving the valve member endwise.

By means of the various mechanisms in the design, the main port may be worked independently of the numerous lateral ports or in conjunction with it, and it may be adapted to different phases of operation.

Non-Freezing Fire Extinguisher

Patent has just been granted to Luther Robinson of Eldorado, Kansas (Patent No. 1,536,144) on a new fire extinguisher which embodies many unique ideas.

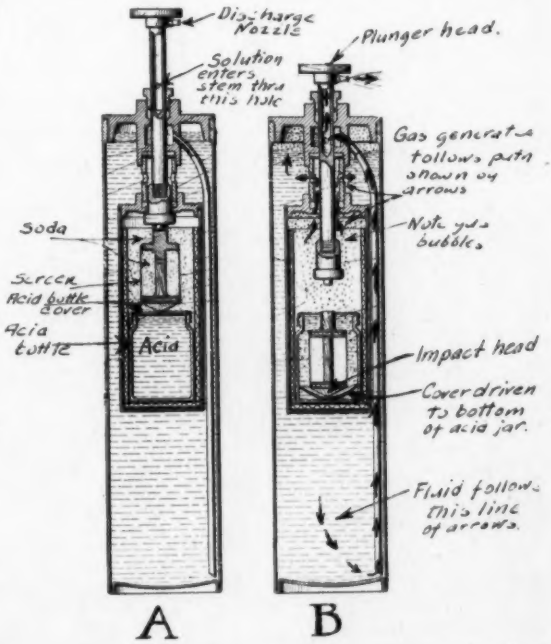
The sketches herewith show the component parts of the extinguisher and together with the following description will give a fair idea of how the extinguisher operates.

Refer to sketch A. Here we have the extinguisher made up of three general parts: The outside casing which holds the solution to be discharged from the extinguisher; the acid jar and soda in an inner container; and the operating mechanism.

The support of the soda and acid container is shown in the diagram.

The acid is contained in a bottle at the lower part of the inside of the container, the bottle being covered with a lead or other non-corrosive and easily collapsible material. Just above the acid jar lid is an impact head made up of some non-corrosive material and so made that quite a quantity of soda is supported around it by a wire screen.

To operate the extinguisher the plunger head is driven down forcing the impact head through the covering of the acid jar. The impact head then continues on and enters the acid jar displacing the acid and at the same time bringing the soda which is contained within the impact head in contact with the acid.



A reaction between the acid and soda takes place, and the path of the gas is shown in sketch B.

When the plunger head is driven downward it carries with

(*Continued on page* 208)

FALSE ALARMS

NOT DEAD YET

The white captain of a colored fire company in one of the southern American cities, recently rolled into a still alarm and sent one of his colored firemen in with an extinguisher to put out the small fire. The colored firemen came rushing out minus the extinguisher with the following startling information:

"De man in de back of de store has done hung hisself!"

Captain: "Hanged himself? Did you cut him down?"

Colored fireman: "No sah! He ain't dead yet!"

Voice from the ground—"Can you manage to hang on a bit longer Albert! We're getting a ladder up to you."

Albert (conscientious two-platoon man)—Well, for goodness sake, man, hurry up. I'm due to knock off for change of platoon in about ten minutes.

THEY CAME BACK

"When I was a little child," the new hardboiled captain sweetly addressed his men at the end of an exhaustive hour of drill, "I had a set of wooden firemen. There was a poor little boy in the neighborhood and after I had been to Sunday School and listened to a stirring talk on the 'Duties of Charity' I was thoughtful enough to give them to him.

"Then I wanted them back, and cried, but my Mother said, 'Don't cry, Bertie, some day you will get your wooden firemen back.'

"And believe me, you lob-sided mutton-headed goofus-brained set of certified rolling-pins, that day has come."

FIRE CHIEF'S AUTO HAS NAIL MANIA

By F. A. R.

It has been discovered that one of the rear tires of the automobile used by Fire Chief Henry Hyatt, of Fitchburg, Mass., has "a nail inferiority complex." The reason is, the last nine times this machine left the municipal garage, nine times has it returned to its "stall" in a condition which might be described by the race track chart callers as "pulled up lame." No one knows how, or why, but the truth is that one perverse tire just simply cannot pass over nails along the thoroughfare without becoming attached to them. Fire Chief Hyatt logically believes the machine is "jinxed."

KEEPING IT DARK

A few years ago the chief of one of the central western fire departments employed his own men and paid them what they were worth.

He found that the men in the various stations, being so much together would exchange confidences and as a result a great deal of bitterness was created through men learning that they received different wages.

He thereupon inserted receipt memorandas in the pay envelopes that read.

"Your salary is you own personal business—a confidential matter—and should not be disclosed to anyone else."

One of the boys in signing his receipt, added:

"I won't mention it to anybody. I'm just as much ashamed of it as you are."

WE'VE KNOWN 'EM LIKE THIS

A young man from the country, walking along a city street, stopped in front of the fire station and looked in.

"D'ye have many fires in town?" he asked.

"Yes, we have 'em pretty often," replied a fireman.

"Ever try to see how quick you can get out?"

"Oh, yes."

"I'd like to see."

At that moment an alarm was sounded. At the first stroke of the gong the men rushed to their posts, the doors of the station opened, and within a few moments men and engine were speeding down the street.

The young man watched the proceedings with admiration, but not without a slight swelling of the chest.

"Well," he exclaimed, as he walked away. "That's pretty good. Much obliged."

BEYOND THE LAP AGE

He was the smallest fireman in the department and one evening he was invited to attend a party at headquarters. He was such a little chap that the ladies had no idea that he was a full fledged fireman at all, but took him for somebody's "dear little boy" in the natty fire department uniform.

At last one of them on whose lap he had been sitting and who had just kissed him, asked: "And how old are you, little dear?"

"Twenty-two," he said, in a voice like a fog horn. Then the lady swooned.

One day Abe was taking an automobile ride with his friend. During their course the auto caught fire. His friend cried, excitingly. "Go call the fire department!" Abe, excited, didn't think about going into a near grocery store and calling them by telephone and telling them it was an automobile fire. Instead he ran about a block and a half to a fire alarm box. At the approach of the fire department he jumped onto the running board of the first and directed them to his friend's auto.

When they arrived he found out that his friend, with the aid of a passing motorist's fire extinguisher, had put out the fire.

Abe looked about him at the mass of fire apparatus, then at his friend's automobile. He realized that the fire was out and that the fire department's quick response had been in vain.

A question entered his mind. He pulled himself up to the level of the driver of the apparatus on which he stood and asked:

"Vill I have to pay for dat run anyhow?"

H. MARTIN.

Visitor—Your parrot uses shocking language.

Fireman—Yes, the captain bought it and brought it home in his car and a flivver got in his way.

Fire Chief—Come with me; you can get damage for this.

Negress (hit by fire truck)—Good Lawd, man, ah don't need no mo' damages, what ah needs is repairs.

Matter of Finance

Mose, a member of a colored fire company reported in the morning very much-bandaged up. The irate captain warned him: "The very next time you come to the station all banged up like this I'm going to prefer charges against you. Why don't you stay out of fights?"

"Ah'd sho like to, boss," was the doleful reply, "but Ah ain't got 'nuff money to get me a divo'ce."

Ikey (Charging extinguisher with gasoline)—"Vell! It says right on de cann—dot's vot it's for!"—"ART" ESTEY

Rookie fireman—I just bought a new uniform with two pair of pants.

Captain—Well, how do you like it?

Rookie fireman—Fine, only it's too hot wearing two pairs.

BUFFALO

ENTERPRISE STEAMER CO., No. 2

ORGANIZED JUNE 11TH, 1872

INCORPORATED JULY 24TH, 1884

REGULAR MEETING
LAST TUESDAY EVENING
IN EACH MONTH

WALDEN, N. Y., January, 8, 1926

Buffalo Fire Appliance Corp.,
44 Central Avenue,
Buffalo, N. Y.

Gentlemen:-

When this Company was in the market for a piece of Fire Apparatus we investigated the various makes and types of trucks and the decision was to purchase a Buffalo-Larrabee 350 Gallon Triple Combination and the order duly placed.

On delivery the Underwriters test was passed with a large margin of safety and the truck was immediately accepted and placed in service.

To say we are pleased is to put it mildly. The outfit cannot be surpassed for performance, construction, and finish, and is complete in every detail.

If we were again in the market we would buy a Buffalo Larrabee 350 Gallon Triple Combination and do not hesitate to recommend this make and type of truck to anyone.

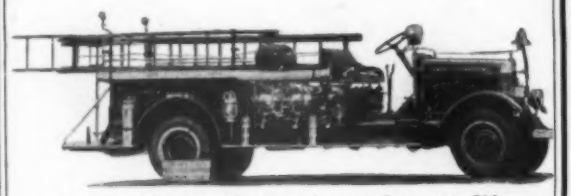
We will be glad to demonstrate the truck to anyone whom you wish.

Very truly yours.

Edward Oliva

Foreman.

BUFFALO



"Pirsch" double tank chem. hose and pumper 500 gal. cap.

"Pirsch" has built fire apparatus exclusively for nearly 30 years. Today "Pirsch" apparatus or equipment will be found in over one thousand fire departments—all over the world.

You take no chance buying of us—You do not buy an experiment—"Pirsch" apparatus and equipment has been proven through actual service.

Let us figure on your new apparatus of any type, especially pumpers of 150—300—500—750 gallons capacities.

Our new catalogue No. 16 is now ready—Ask for it.

WHEN YOU THINK OF LADDERS
THINK OF "PIRSCH"
PETER PIRSCH & SONS CO.
KENOSHA - - - - - - WISCONSIN
New York Office, 15-25 Whitehall Street, New York, N. Y.

BADGES

of Every Description

QUALITY GUARANTEED

Right Prices
Prompt Deliveries

We Also Make the Durable

"ROSS" HELMET

Our latest catalogue and price list will gladly be sent on request.

EVERSON-ROSS CO., INC.
88 Chambers St., New York

ALARM SIGNALS

Made to meet your particular requirements.

Worcester Fire Alarm Signal is made upon designs that have proven true by years of actual use. You can count on our long experience, always at your service.

Ask for Catalog F-51.

Union Water Meter Company
(Established 1868)
Worcester Mass.

New York Office
50 Church Street

Philadelphia Office
539 Real Estate Trust Bldg.

FIRE DEPARTMENT ACTIVITIES

New Chief for Mauch Chunk, Pa.—David Pearsall has been elected chief of the fire department at Mauch Chunk, Pa.

Freeman, S. D., Selects Fire Chief—Jacob A. Gering has been elected chief of the fire department at Freeman, S. D.

Utica, N. Y., Has New Fire Company—On February 1, Company No. 5, the new fire company of Utica, N. Y., was mustered into service.

Amboy Firemen Injured—Nineteen firemen were seriously injured, one perhaps fatally, when a ladder truck and a motor fire engine collided head on at South Amboy, N. J., recently.

Harrodsburg, Ky., Purchases Apparatus—A Boyer 500-gallon pumper was purchased by Harrodsburg, Ky., for immediate delivery.

Zanesville, O., May Move Central Station—The city Council of Zanesville, Ohio, is considering moving the central fire station.

Myersdale, Pa., Has Apparatus for Rural Protection—A new piece of fire apparatus was tested recently by Myersdale, Pa., for the protection of the rural communities in the immediate vicinity.

Hedden, President of Buffalo, N. Y., Beneficiary Club—With no opposition, Chief George W. Hedden was elected president of the Buffalo, N. Y., Fire Department Beneficiary Association. Competition for the other positions was keen.

Promotions at Cheyenne, Wy.—Edward P. Taylor, who has held the office of Commissioner of Labor in Wyoming, has been made chief of the volunteer department at Cheyenne, Wy. He has been a member of the department for many years.

Brainerd, Minn., Purchases Truck—The city council of Brainard, Minn., has placed an order for a fire truck with the Prospect Fire Engine Co., of Prospect, O., the price being $6,500.

Field Day for N. J. Firemen—Friday, August 13 has been set as the annual field day for the firemen of New Jersey. On that date about 5,000 firemen from all over the state are expected to assemble at Bradley Beach.

Want Fire Cisterns Near Alliance, O.—Chief Held advocated the construction of a number of fire cisterns in the villages near Alliance, Ohio, so that in the event of fire, apparatus from Alliance will have sufficient water for fire-fighting.

Denver, Colo., Purchases New Fire Apparatus—Three pieces of Stutz fire apparatus costing $30,000 have been purchased by Denver, Colo. The equipment consists of two 750-gallon pumper and a ladder truck.

Logan County, Utah, Renews Fire Protection Contract—The contract for the joint operation of the fire department by Logan City and Cache county, as was described in an article in *Fire and Water Engineering*, has been renewed by the city and county commissioners.

Reading Pa., Fire Company Plan to Celebrate—The Rainbow company of Reading, Pa., which was organized on March 17, 1773, and which is said to be the oldest fire organization in the United States in point of service, are making plans to celebrate their 153rd anniversary.

Hastings, N. Y., Company Celebrates Anniversary—A dinner at which two hundred attended was the means of celebrating the fiftieth anniversary of a fire company in Hastings, N. Y., said to be the second oldest fire company in Westchester county.

More Pay for Norristown Pa., Firemen—The Firemen's Union and Relief Association has asked the city for an advance in the appropriation for the employes of the fire department at Norristown, Pa. Each of the companies now receive $2,500 a year. The city recently spent $50 for equipment.

Quincy, Ill., to Have State Convention—The citizens of Quincy, Ill., together with the fire department of that city, are preparing to entertain the next annual convention of the Illinois State Association. It is proposed to organize a Women's Auxiliary to the State Association, at this meeting.

Reduced Losses at El Paso, Texas—Report from El Paso, Texas, says that the fire losses in the valley gin during last year were reduced $135,000 by the use of safety matches by farmers and employes in the gins. Ninety per cent of the fires are caused by lighted matches igniting the cotton.

Kearny, N. J., to Enlarge Department—The fire department at Kearny, N. J., is to be enlarged by the appointment of thirty-four additional firemen, making eighty-eight men and a chief. K. F. Pierce is the department head. A new triple combination car is among Chief Pierce's recommendations.

Relief Association Formed in Reading, Pa.—A relief association with one hundred members was formed by the Rainbow Fire Company of Reading, Pa. The organization was suggested by Chief John G. Niethammer who has been elected treasurer of the new organization.

Fire Chief Receives Gold Pen—In honor of his reappointment, Chief Earl Bachelder of the fire department in Centredale, R. I., was recently tendered a dinner at which time he was presented a gold fountain pen. A large number of citizens and firemen attended the function.

Los Nietos, Cal., Fire Protection—Fire protection is to be afforded the citizens of Los Nietos, Cal., which is a manufacturing center, adjacent to Los Angeles. A $10,000 fire station is being built and sufficient apparatus will be maintained to afford protection to the community.

Vinton, Va., Organizes Department—The citizens of Vinton, Va., have organized a volunteer fire department with 32 members. Emory K. Short is the chief; J. A. Fitzpatrick, assistant chief, and C. E. Newman, secretary-treasurer. The town has placed in service one combination Seagrave motor and pump, and has under construction a municipal building with fire headquarters.

Huntington, W. Va., to Motorize Department—Plans are being made by Chief Knight of Huntington, W. Va., to motorize the department in about ninety days. The equipment will be purchased from the $175,000 bond issue. Bids were invited for four 750-gallon pumpers and one city service truck. It is believed that the equipment will not be delivered until ninety days.

Shavertown, Pa., Apparatus Tampered With—For the third time in a month, it was discovered that the fire apparatus of Shavertown, Pa., was tampered with. On previous occasions, the chemical line was blocked and the last time, it was found that two wires were disconnected from the magneto. Neither the culprit nor the motive for the act, could be discovered.

Detroit, Mich., to Curb Fire Fanatics—An ordinance has been drafted in Detroit, Mich., which is designed to curb the activities of a number of motorists who chase fire apparatus. According to the new law, no car shall follow closer than 500 feet. The penalty for violation of this ordinance is $100 fine, 90 days' imprisonment, or both. The ordinance was made necessary because of the large number of accidents to fire apparatus.

New Fire Station Opened in Washington, D. C.—The residents of the northeast section of Washington, D. C., are celebrating the opening of a new fire station. More than 1,500 residents of the district assisted in the formal opening. The first attempt to secure a fire station for the community was made on February 8, 1894. It was not until June 7, 1924, that Congress passed an appropriation for the construction.

Fire Alarm Notes

Perry, Ia., Orders Electric Siren—An electric siren has been ordered for Perry, Ia.

Beach, N. D., Installs Electric Siren—A siren has been installed in Beach, N. D., and will be operated from the telephone central office.

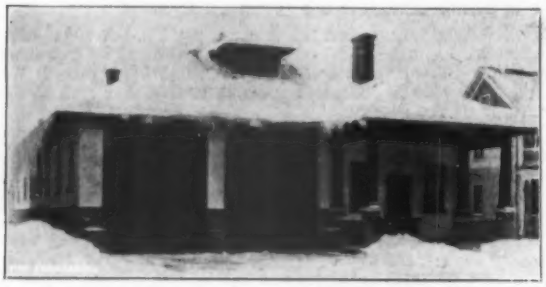
New Siren for Chatham, N. Y.—An electrically operated siren has been installed in Chatham, N. Y. It will be operated from the telephone central.

Riverside, N. J., to Install More Boxes—The township committee of Riverside, N. J., will install eight additional fire alarm boxes. According to the new box distribution, there will be a box at each school house, and the siren code will be revised to permit of the additional signals.

Fremont, Mont., Wants Colored Lights on Board—The fire department at Fremont, Mont., is agitating for the installation of 150 green lights on the switchboard of the local telephone company so as to facilitate the relaying of fire alarms to the call men. The telephone company is willing to install one hundred green lights on their board but the fire company is insisting that 150 colored lights be installed.

Bungalow Fire Station of Utica, N. Y.

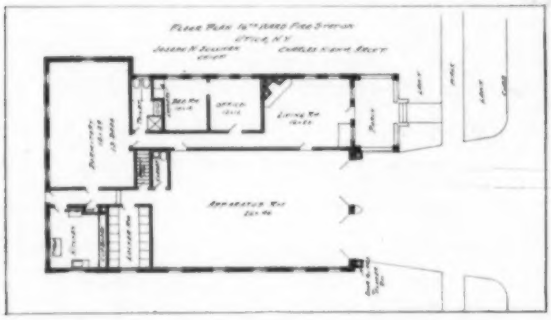
It is evident that Chief Joseph N. Sullivan, who furnished the information on their new bungalow fire station, is not trying to spread propaganda on the balmy, ninety-eight-in-the-shade winter temperature of Utica, N. Y. The station, because of its attractive design and low construction cost, should have an appeal



Exterior of Utica, N. Y., Bungalow-Type Fire Station.

for many fire chiefs. It is constructed of tapestry brick and cream colored stucco with the trimmings painted a light green.

The dormitory which has space for thirteen beds, and the kitchen is located in the rear. The apparatus room is twenty-six by forty-six feet and at present houses an American-LaFrance combination chemical and hose car but provision has been made for also housing a city service truck. The living room which is



Floor Plan of Bungalow-Type Fire Station in Utica, N. Y.

sixteen by twenty feet has a fire place in one corner which helps to make it cozy and home like.

The station completely furnished with beds, furniture, gas stove, dishes and so forth cost $28,000. It is heated by an oil heater vapor system. This is the first bungalow fire station to be constructed in that section of New York state.

Chief Sullivan writes, "We are so well satisfied with this type station that the recommendation to build three additional stations next year was made in the annual report."

Makes Fire and Electrical Inspections

Kenosha, Wis., is located on the lake side not far from Milwaukee. The city is operated under the city manager plan, which seems to have thus far proven very satisfactory to its citizens, at least it has had a tendency to keep down the fire losses, according to information supplied to FIRE ENGINEERING by Chief John J. Schwartz of the Kenosha fire department. By harmonious co-operation between the fire department and the building and water departments, the per capita fire loss during 1924 was but 58 cents. One-half of the city is restricted, so far as new buildings are concerned, to fire-resistant roof coverings, and after a lapse of ten years all buildings must be covered with this kind of material.

The fire prevention bureau is headed by the second assistant fire chief, under whose direction regular quarterly inspections of all buildings are made by members of the fire department. Special inspections are also made in the business and industrial districts by the bureau itself. A card index and follow-up record system is maintained. During 1924 the bureau inspected 341 buildings as to their electrical equipment alone, and of these connections were ordered and completed on 297.

The chief of the bureau of fire prevention is also the electrical inspector, and in connection with the building department 7,359 inspections were made in 1924. Pupils in the public schools are given lessons in the methods of turning in fire alarms, and are taught to familiarize themselves with the location of fire alarm boxes. For this purpose the children are furnished with questionnaires which they are supposed to fill out and return to the fire department. Their attention is called to the most common causes of fires in their own homes and other buildings. School buildings are regularly inspected and fire drills are maintained. The effect of such a campaign is very obvious and its results gratifying.

Fire Department Sleighs Used During Heavy Snow in New England

The recent heavy snows in New England have made many streets impassable to motor driven fire apparatus and as a result of the existing conditions a considerable number of fires gained headway and in some cases destroyed property which could have been saved under normal circumstances. There were frequent cases of engines, becoming stalled in the snow. Some of the city fire departments installed "pungs" or horse drawn sleighs equipped with hose and chemical extinguishers to respond to alarms in hilly sections and over snow clogged roads.

Among the municipalities using this form of emergency equipment were Boston, Quincy, Everett, Beverly, Newburyport, Randolph, and Woburn, all in Massachusetts.

Fire apparatus of the Braintree department became stuck in drifts while responding to an alarm for a fire that destroyed the home of Dominic Caramanica. Two boys and two girls, cut off by fire from doors and stairways in a house at Point Shirley, Winthrop, leaped from a second story window into a snow bank and escaped unhurt. Fire apparatus became blocked a quarter of a mile away and firemen had to stretch in hose lines by hand.

Engine 1, of East Woburn, Mass., ran into a snow bank and was delayed for a half hour while responding to the general alarm for the fire in the Gorin Block on Main Street, Woburn. Engine 4 was also delayed.

In Quincy, Mass., Engine 1 became stalled in the snow while responding to an alarm for a blaze in the house of John Callahan in South Quincy. The preceding night Engine 2 and Ladder 1 became stalled while going to a fire in the Montclair section of Quincy.

In Hull, Mass., Engines 2 and 3 and Chemicals 5 and 7 became stalled in deep snow while answering a call from Nantasket Avenue and Main Street and were two hours being dug out.

The house of Dana A. Brewster, situated two miles from the center of Haverhill, Mass., was burned to the ground as city apparatus was unable to get within a quarter of a mile of the burning building owing to snow drifts.

In Newburyport Engine 7 became stalled while going to a fire that caused heavy damage in the home of Ernest Boudreau at the junction of Merrimac and Kent Streets.

A garage on Sydney street in the Dorchester district of Boston was burned to the ground when motor apparatus was unable to proceed nearer to the fire than Dorchester Avenue because of deep snow.

Fire destroyed a 2 story frame building of the Catholic Mission School in Duxbury, Mass., while apparatus attempting to reach the scene from Duxbury and Kingston was held up by snow blocked roads.

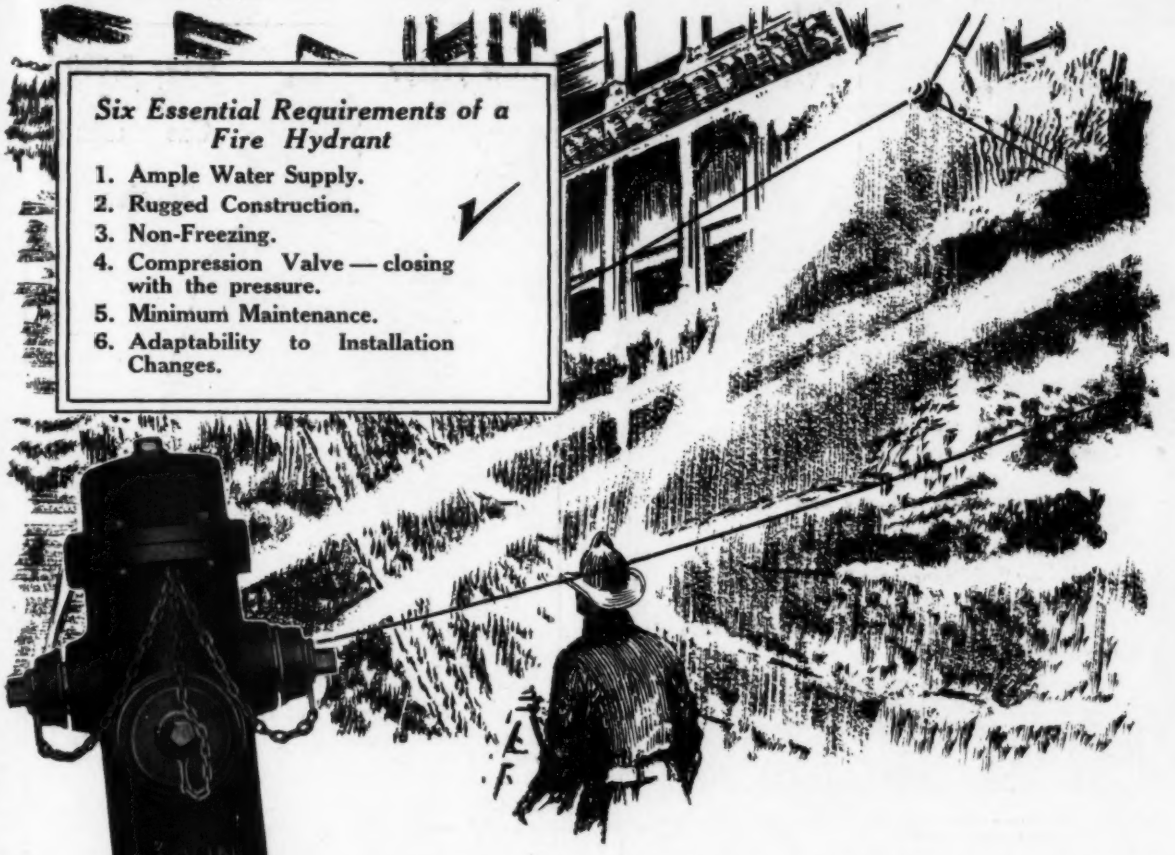
In Woburn a pung carrying hose to a fire in the Greek Orthodox Church came to grief when the two horses drawing it became frightened at the alarm siren and ran away spilling the hose and equipment along the road. In Randolph a horse obtained for fire service was stabled in an old barn the floor of which collapsed during the night and the animal was only rescued after great difficulty.

The storm showed the necessity of detailing men to shovel the snow clear of hydrants which in many cases were completely buried. It also made evident the fact that even the most powerful motor apparatus cannot be depended upon to plow through deep snow and that under blizzard conditions nothing can take the place of horse drawn equipment on runners.

HARRY BELKNAP.

Sioux City, Ia., to Vote on Firemen's Wage Increase—A petition is being circulated about Sioux City, Ia., to place the question of an increase in the firemen's salary before the voters on March 29.

Milford, Neb., Firemen Have Banquet—The fire department of Milford, Neb., held their twenty-second annual banquet in a building which was decorated with animals' heads to represent a hunting lodge.



Six Essential Requirements of a Fire Hydrant

1. Ample Water Supply.
2. Rugged Construction. ✓
3. Non-Freezing.
4. Compression Valve — closing with the pressure.
5. Minimum Maintenance.
6. Adaptability to Installation Changes.

What Does the Fire Chief Ask Himself When About to Buy Fire Hydrants?

Non-Freezing ✓

When the thermometer hovers around the zero mark, then—and then only—is the time to test a fire hydrant. Fires have a way of starting in winter as well as in summer, and a hydrant that clogs and freezes up—that is difficult to drain—is about as useless as an alarm box that won't ring.

Darling Fire Hydrants have an enviable reputation for "delivering the goods" in all times of emergency. The first swing of the wrench gets the maximum pressure from its extra large barrel—even in the coldest of winters.

It would pay the Fire Chief to check the Non-Freezing ability of a Darling Fire Hydrant. Catalogues and other data gladly sent upon request.

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Williamsport, Pa.

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Do they hear *You* Coming?

Buckeye Whistles will clear the way for your apparatus and your officers' cars, many blocks ahead. You can rely upon them, chief, because they are extremely effective and always dependable.

They are made to last a lifetime and are being sold for Fire Department Service exclusively.

A 60-day trial will convince you why almost 400 Fire Chiefs in the United States alone, have recognized in

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New Victor Gas and Fume Mask

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FIRE HYDRANTS
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Note—

The positive waste valve.

All operating threads are above the Stuffing box.

No toggles, small screws or other small, quick-wearing parts.

All moving parts are bronze or bronze bushed.

The outside casing permits replacing a two-way standpipe with a steamer and two-way standpipe without digging up the ground.

Valves and Boxes
Cast Iron Pipe and Fittings
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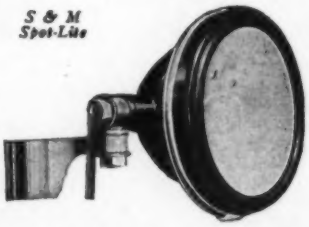
Special Lighting Equipment

S & M Spot-Lites for Chiefs' Cars.
S & M Pick-Up-Lites for Fire Apparatus.

S & M Spot-Lite



Model No. 90
Diameter Reflector 7½".
Light Projection 3600 ft.

The S & M Spot-Lite is recognized everywhere as the standard of excellence.

The brilliancy of the powerful beam of light produced by the scientific S & M Reflector cuts far into the distance and insures a generous field of illumination.

S & M Spot-Lites can be used on the windshield of the fastest *Fire Car.*

S & M Pick-Up-Lite

The S & M Pick-up-Lite is the same as the Spot-Lite except that it is equipped with a special diffusing lense to spread the light, and when installed on the rear of the apparatus it is an indispensable aid in picking up hose, ladders, or any equipment that might be used on a *Fire Wagon.* In many instances it can be directed on ladders to light the way of ascending and descending firemen, and illuminating dark corners and runways.

Write for descriptive catalog and prices

S & M LAMP CO. (Inc.)
118 W. 36th Street Los Angeles, Calif.
Manufacturers of Special High Grade Lighting Equipment for Fire Apparatus.

Outside Praise for Shreveport, La., Dept.

In forwarding his subscriptions for *Fire Engineering*, Henry O. Williams, fire chief at the United States Veterans' hospital in Alexandria, La., has voluminous praise for the fire department of Shreveport, a neighboring city, under the direction of Chief S. J. Flores. Chief Williams is located about 100 miles south of Shreveport. He has at the government hospital three pieces of apparatus located in one station, and has been taking lessons in fire-fighting, under Chief Flores at Shreveport. "I learned a lot down there," he says; "My fifteen days' training under Chief Flores taught me many things that I never knew. They have fire-fighting down to a science in Shreveport, and make quick time in responding to fires. Chief Flores gave me personal instructions in engineering a combat with a fire. I was also taught many valuable lessons by his assistant, Floyd Kindrick, a very able fireman. According to my judgment, the department is among the best equipped and most efficient in this part of the country. The members of the department are a clean cut lot of fellows, loyal to the service. It seems like an ideal organization. Chief Flores is not hampered by politics, the city giving him a free hand in selecting his men. The city is growing, and is about to build a central station and several suburban stations.

"I am inspired to write this because I believe that such an efficient department should be mentioned in your magazine."

Richards' Designs of White Plains Station

Since the publication of the plans and description of the bungalow fire station of White Plains, N. Y., in the February 10 issues of FIRE ENGINEERING, there has been so much favorable comment concerning it, that it was thought many would be interested in the name of the architect. He is Theodore Richards, 18 Odell Ave., White Plains, N. Y., an architect of prominence in this section of the country.

Fire Square Club Holds Anniversary Dinner

The fifth anniversary dinner of the Fire Square Club in New York City was a testimonial to Battalion Chief Albert Reid and Honorary Battalion Chief Pierron W. Bergen, M.D., president and vice president respectively. The club was organized January 26, 1921.

Incidentally, the occasion also marked the eve of the 35th anniversary of Chief Reid's appointment as a fireman in the New York Department. About 700 persons attended. The toastmaster was Mrs. May M. Gooderson, wife of Deputy Chief Fred W. Gooderson who is one of the members of the board of trustees of the Fire Square Club.

Tolerance was the keynote of every address. Chief Reid and Dr. Bergen were each presented with diamond rings, tokens of esteem and affection from their comrades in the Fire Square Club. The chairman of the dinner committee was Capt. Leon Howard of Engine Co. 205 in Brooklyn. Mrs. Gooderson used for the first time a new gavel which was presented to the Fire Square Club by the Lambskin Club of Philadelphia. The Lambskin Club is composed of Philadelphia firemen and policemen who are members of the Masonic fraternity.

Fire Chief John Kenlon delivered a most eloquent address. He referred to former days in the department when Chief Reid and himself were supervising engineers. Chief Reid, like Chief Kenlon was a seafaring man—hence the close bond of friendship between them.

In making reference to his former sailing days, Chief Kenlon provoked a laugh when he said—"So you see, ladies and gentlemen, I may not be a Grand Master, but I am a past master." The diners caught the point and showed that they did. Later Chief Reid said "You know we old sailors must hang together."

Other speakers were, Rev. Joseph H. Ivie, Fire Chaplain and also Chaplain of the Fire Square Club; Dr. George M. Bennett, Justice Arthur S. Tompkins; Charles A. McHenry, president of the League of Masonic Clubs; Major Stanley L. James, U. S. A., State Vice President of the League; Fire Chaplain Patrick F. O'Connor, Fire Chaplain Edward P. Costello and the Most Worthy Robert H. Robinson.

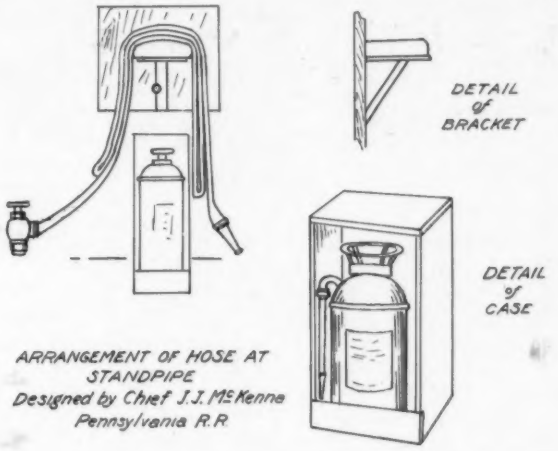
DALY.

Fire Department of Beaumont, Tex., to be Improved—The city of Beaumont, Texas, voted to float a $75,000 bond issue which will be used in part for improving the fire department. About $33,000 will be spent for extensions to the fire alarm system and a new pumper will be purchased together with a chief's car and a service truck.

New Idea in Standpipe Hose Racks

A plan whereby the danger of ripping hose will be eliminated has been developed and used by Chief J. J. McKenna of the Pennsylvania Railroad. A disadvantage of the present system is that when some workman endowed with a strong pull, grasps the nozzle and starts reeling off, part of the hose may be pulled off the reel and may be cut by the edge of the reel.

According to Chief McKenna's plan, a saddle is constructed and mounted on a large board which is painted red. The board is fastened to the wall near the standpipe connection. The saddle is well rounded off and presents no sharp corners. The hose line is draped back and forth over this saddle. In the space between the folded lengths of hose, is mounted a box in which the fire extinguisher is placed. No manufactured parts are necessary as all the devices needed are home made. The sketch shows the arrangements and the necessary details of the parts.



ARRANGEMENT OF HOSE AT STANDPIPE
Designed by Chief J.J. McKenna Pennsylvania R.R.

Canadian Firemen Play Santa Claus

The fire department of St. Thomas, Ont., Canada, made Christmas a happy one for the children of that city. They sent out an appeal to families for all kinds of discarded and broken toys, which the firemen repaired and "dolled up." These were then presented to children who were not so fortunate as to have a visit from Santa Claus. The response to the appeal was liberal, and the firemen had their hands full for some time prior to the holidays. On the occasion of the distribution Captain Marshall acted as Santa Claus, and with the firemen off duty distributed toys and books to hundreds of little ones. Nor were the "shut-ins" forgotten, for every home where there was a sick child Santa Claus made a call, and added cheer to the household. Chief J. C. Miterlla, Deputy Chief Sutherland and Captain Marshall are shown in the center of the illustration.

Firemen at St. Thomas, Ont., Please Children. Chief J. C. Miterlla, Deputy Chief Sutherland and Capt. Marshall (Santa Claus) in Center of Picture

CONVENTION DATES

March 30-31—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual Convention, Palatka, Fla. Secretary, Chief F. C. Pfaender, Winter Haven, Fla.

April 1—INDIANA FIREMEN'S ASSOCIATION. Annual Convention, (tentative date, week of April 1), Marion, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

May 10-13—NATIONAL FIRE PROTECTION ASSOCIATION (International). 30th Annual Meeting, Atlantic City, N. J. Secretary, Franklin H. Wentworth, 40 Central St., Boston, Mass.

June 8-10—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 37th Annual Convention, Port Jervis, N. Y. Secretary, Chief Chris W. Noll, Fire Department, Poughkeepsie, N. Y.

June 9-11—MARYLAND STATE FIREMEN'S ASSOCIATION. 34th Annual Convention, Westminster, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 22-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS—Fourth Annual Convention, Hotel Carpenter, Corner Merrimack and Franklin Sts., Manchester, N. H. Exhibit Hall, New Watertown, Mass. Chairman, Exhibit Com., Chief Henry H. Heitman, Waterbury, Conn.

July 14—DELAWARE STATE VOLUNTEER FIREMEN'S ASSOCIATION. 6th Annual Convention, New Castle, New Castle County, Del. Secretary, Sam H. Carson, Dover. President, Geo. Clifton Maull, Lewes.

July 27-28—WESTERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Kenmore, N. Y. Secretary, Henry A. Clark, 21 Porter Ave., Batavia, N. Y.

Aug. 17-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 55th Annual Convention, Alexandria Bay, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Sept.—KANSAS FIRE CHIEFS AND FIREMEN'S ASSOCIATION. Tentative Month of Annual Conventions, at Manhattan, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Sept. 14-15—IOWA STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Manning, Ia. Secretary, E. E. Parsons, Marion.

Sept. 27-29—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Jonesboro, Ark. Date of meeting tentative. H. S. Compton, secretary. Central Fire Station, Little Rock, Ark.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual Convention, Philadelphia, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS. 54th Annual Convention, Hotel Roosevelt, New Orleans, La. Secretary, Chief James J. Mulcahey, Yonkers, N. Y.

Proposed Conference of Fire Chiefs

Fire Chief Owen C. Dunn, of St. Paul, Minn., has addressed the League of Minnesota Municipalities, suggesting the desirability of holding a conference of chiefs to discuss problems of fire prevention. It is the purpose to arrange for a series of meetings with all the chiefs in the state in attendance. The League is desirous of receiving suggestions from chiefs or other municipal officials regarding this proposal.

Non-Freezing Fire Extinguisher

(*Continued from page* 199)

it the hollow stem which is tapped with a hole shown at the top part of sketch A.

As this plunger is driven downward this hole comes in contact with a small chamber just beneath the top of the extinguisher. To this chamber is attached a duct or pipe leading down to the bottom of the extinguisher.

When the plunger is driven down, in addition to causing the reaction in the extinguisher, it brings this hole in communication with the chamber which is connected to the pipe.

The gas on rising to the top of the extinguisher creates a pressure above the fluid and this pressure forces the fluid as shown in sketch B up through the pipe, into the chamber just beneath the head, from where it enters the hollow stem through the hole mentioned before. The fluid then passes up through the stem and out through the discharge nozzle.

This extinguisher has many points in its favor among which the greatest is probably the fact that it is comparatively non-freezing. A sulphuric acid of high concentration may be employed and having a low freezing point. The dry soda is of course, non-freezing.

When these two substances react upon each other they give off a gas and this gas forces the solution in the main chamber of the extinguisher out through the discharge nozzle. This solution may be any solution which is non-freezing.

Clearwater, Fla., Buys Apparatus—The city commission at Clearwater, Fla., has recently ordered a service truck and a hose truck, at a total cost of $15,000.

Berne, Ind., To Have New Siren—A new siren was ordered for Berne, Ind., and one of the controls for operating it will be placed in the telephone exchange.

PROPOSED IMPROVEMENTS

Hancock, Delaware Co., N. Y.—Construction of fire station planned.

Cooperstown, Otsego Co., N. Y.—Petition filed in Worcester district asking for purchase of fire equipment for Worcester fire district and for fire siren.

Brookfield, Madison Co., N. Y.—Considering purchase of motorized fire apparatus.

Lorain, Lorain Co., Ohio.—Statement made that Fire Station No. 2 is in need of equipment.

Flourtown, Montgomery Co., Pa.—Contract awarded for construction of new fire station.

Stroudsburg, Monroe Co., Pa.—Building proposed for East Stroudsburg to house fire apparatus.

Tarentum, Allegheny Co., Pa.—Appropriation allowed for purchase of new fire pumper.

Carbondale, Lackawanna Co., Pa.—American Legion (Albert H. Crane Post) decided to organize a hook and ladder fire company to work with present three companies. Company to be financed by legion.

Birmingham, Jefferson Co., Ala.—Architects working on drawing plans for five new fire stations. Residents of Highland Ave., protest against construction of fire station.

Stuttgart, Arkansas Co., Ark.—Request made by Arkansas Fire prevention bureau that city purchase pumper and to install additional fire hydrants.

Atlanta, Fulton Co., Ga.—City to sell fire station dividing present equipment among other stations.

Fitzgerald, Ben Hill Co., Ga.—Consideration being given to installation of fire alarm system.

Galsford, Peoria Co., Ill.—Volunteer fire company organized. Funds being raised for the necessary apparatus and equipment.

Mackinaw, Tazewell Co., Ill.—Volunteer fire company organized.

Sunbury, Northumberland Co., Pa. — Committee selected to purchase needed fire apparatus; consists of Dr. R. B. McCay, Albert Kaufman and others.

New York, N. Y.—Bids will be received until March 1 by the fire commissioner at the Municipal Bldg., for the construction of a portion of the underground fire alarm system, Borough of Brooklyn. The work must be completed in 100 working days and the contractor must deposit $4,500 security.

Remsen, Plymouth Co. Iowa.—Farmers in this locality interested in problem of fire protection.

Proposals for Hook and Ladder Truck

BOONTON, N. J.

Bids opened March 15, 1926

Sealed bids will be received by the Mayor and Board of Aldermen of the Town of Boonton, New Jersey, on Monday, March 15, 1926, at 8:30 p. m., at the Town Hall, Boonton, N. J. for the purchase of a motorized Hook and Ladder Truck to the following specifications:

Motor: 6 cylinders, not less than 75 H. P.
Tires: Front 36 x 6; rear 38 x 7; Pneumatic.
Ladders:
1—45 ft. or 50 ft. extension, truss type.
1—35 ft. or 40 ft. extension, truss type.
1—25 ft. or 30 ft. extension, truss type.
Wall Ladders:
1—22 ft., truss type.
1—20 ft., truss type.
1—18 ft., truss type.
Roof Ladders:
1—16 ft.
1—14 ft.
1—12 ft.
Miscellaneous Equipment: Of a standard to make this a first class Hook and Ladder job.

Certified check for 5 per cent of the bid to accompany each bid.

Proposals should be addressed to Albert P. Smith, Town Clerk, and enclosed in a sealed envelope marked on the outside "Proposal for Hook and Ladder Truck."

The Mayor and Board of Aldermen reserve the right to reject any or all bids.

ALBERT P. SMITH, *Town Clerk*
2-25, 3-10.

Proposal for Fire Alarm System

ABILENE, TEXAS

Bids open March 12, 1926

Sealed bids will be received by the Abilene City Commission until 4 p. m., March 12, 1926 for Central Fire Station and such station fire alarm equipment together with 50 boxes and necessary line construction.

For further information obtainable from O. K. Hobbs, City engineer.

Proposals Wanted for Fire Hose

ELKHART, INDIANA

Bids opened March 9, 1926

Sealed bids will be received by the Board of Public Works on the 9th day of March, 1926, at 10:00 o'clock a. m., at its office in the Municipal Building, Elkhart, Indiana, for furnishing five hundred (500) feet of rubber lined cotton double jacket fire hose two and one-half (2½) inches internal diameter hose, and couplings underwriters specifications coupled complete in sections of fifty feet, delivered f. o. b. Elkhart, Indiana; samples to accompany bids.

The Board of Public Works reserves the right to reject any or all bids.

A. W. Davis,
N. E. Shaner,
F. L. Marchesseau,
} Board of Public Works.

2-25

Fire Apparatus Wanted

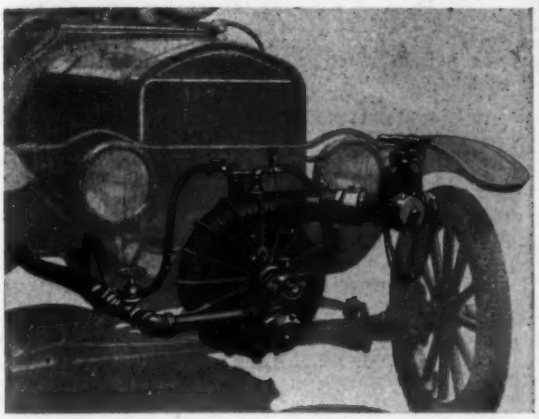
The City of Mishawaka, Indiana, will receive bids until 11 a. m. March 1st, 1926, for a Triple Combination Hose Chemical 600 Gallon Pumper, with Chemical Tank Fire Foam.

A certified check for $250.00 and a non-collusion affidavit must be included with said bids.

The right is reserved to reject any and all bids.

Signed:—City of Mishawaka, by Board of Public Safety.
Ralph S. Feig, President
L. B. Gamble, Clerk

2-25



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AT LOW COST

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Every town, or village can now have adequate fire protection at low cost.

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AMERICAN STEAM PUMP CO.
Battle Creek, Michigan

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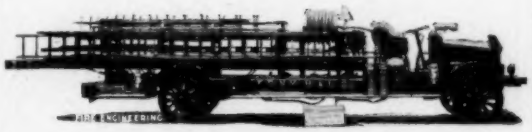

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Hook & Ladder Apparatus

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Up-to-date FIRE FIGHTING APPLIANCES.

Write us when interested.

Combination Ladder Co., Inc.
381 Fountain Street Providence, R. I.

Beat the Fire to it with an ERICK ELECTRIC SIREN

30 Days Free Trial

For Volunteer Fire Departments in towns of from 300 to 5,000 population, there isn't a Siren or a system in the world to equal the Erick. Night and day—year in and year out—it offers best protection to lives and property. The Erick is the only Siren using one big whistle on a powerful 3 and 5 h. p. motor which throws its sound evenly in all directions—louder and more penetratingly than all others. Write for full information and details of liberal 30 Day Free Trial Offer.

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re given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

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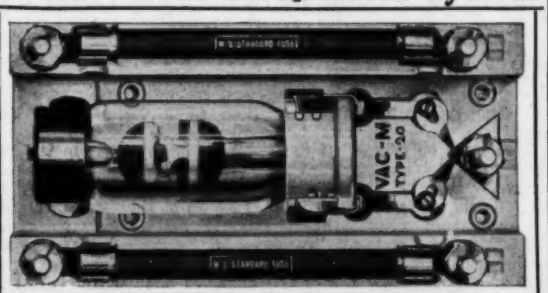

With VAC-M Arrestors **National Electric Specialty Co., Toledo, O.**

A Fire Brigade Field Day

(*Continued from page* 196)

covered and written orders were issued to Department Managers, who promptly remedied the objectionable conditions. In

Ladder Contest, Field Day, Singer Mfg. Co.'s Fire Department.

the care and maintenace of fire equipment, in the analysis of the causes of fires, and in the study of fire hazards, the report reflects really constructive work, and allows the management to know the exact condition of their plant in relation to that most

Hose Stream on Roof of Training Tower.

important subject of fire prevention and protection.—*Factory Mutual Record.*

Pointers on Handling Injured at Fires

(*Continued from page* 578)

as done properly, by the use of stretcher. Fig. 3 shows the method of transporting or carrying with two, four or eight men as carriers. Fig. 4 shows how a very short turn is being made on a very narrow stairway. This stairway is 24 inches wide between balustrade. In Fig. 5, the method of picking up a patient from a trench or excavation is shown and in Fig. 6 how victims are lowered from tower or other elevated structures. Fig. 2 shows the proper method of placing victim on the stretcher, which is done in the same manner as a draw sheet or as a nurse changes the sheet under an invalid in a hospital bed. This is the most humane method of handling a victim at the initial pick-up, avoiding the old clumsy awkward and dangerous way of taking hold of a victim's legs and shoulders.

Care must be taken that the stretcher is adjusted so that the patient's head is on the stretcher as shown in the initial pick-up picture. Fig. 7 shows victim tied up in sitting position. Fig. 8 shows a victim being tied into the stretcher for lowering from some elevated structure. Note how the band circles the head and cap. A half hitch is taken with the rope for lowering, the line being passed through the two handles on the part of the stretcher across the chest of the victim. Enough free end of the line is provided to reach down to the handles on the lower part of victim's body. Two half hitches are then tied about the lower handles. When being lowered the victim will hang in a comfortable perpendicular position as shown in the illustrations. Care [illegible] that the hands are secured at the side by the [illegible] the victim (who may be conscious) from grasping [illegible] through fright. The head of the victim is [illegible] upper band of the stretcher (as shown in Fig. 9), [illegible] the head from falling backwards or sideways [illegible] the spine or neck. The face is protected by [illegible] crossed in front of the face, which also [illegible] falling forward and prevents possible [illegible] the face. The upper handles actually form a temporary [illegible] possible collar-bone fracture or rib fracture. [illegible] held securely at the sides, providing a temporary [illegible] an arm fracture. The weight of the body is supported just below the hips and underneath the buttocks by the center band. This relieves an injured spine or pelvis. In fact the victim's body is supported at every point, preventing compound fractures and complications and dispensing with temporary bandages and slings.

As the canvas of the stretcher is wrapped about a victim's body it embraces his flesh absolutely, preventing a fractured bone shoving through the flesh. The lower handles cross in front of and along the thigh providing temporary splints for these members of the body, also, in case there are fractures or broken bones. The body being naturally wedge-shaped it cannot fall through and out of the stretcher because the opening at the bottom or at the feet of the victim is too small. The lowering line is either thrown over a rung of a ladder or is part of a snatch block tackle.

The stretcher can be used for removing linemen, who have been shocked by electricity from power poles. It can be used for removing victims who may be jammed under a street car, under circumstances where it is only possible to jack up the car with just clearance enough sufficient to permit the rescuer's arm to reach over the victim's body.

University of Illinois Course

(*Continued from page* 194)

specified under the protection of supports or fireproof floors and with all metal joists on floor slabs protected by a ceiling of cement plaster on metal lath, may be classed as Fireproof Floors or Roofs.

Combustible Floors and Roofs

Definition: Combustible floors and roofs are floors or roofs of wood or incombustible materials on combustible supports.

Requirements: Combustible floors are graded according to their type of construction, their grades being designated, for convenience, by the letters A, B, and C.

A. FLOORS

All floors not conforming with the requirements for B or C as described below. (Fig. 1.)

B. FLOORS. (SEMI-MILL CONSTRUCTION)

Combustible floors not less than 3 inches thick (2¼ inches dressed) with vertical supports of wood not less than 6 x 6 inches and with horizontal supports of wood not less than 4 x 6 inches, or with vertical or horizontal supports of metal not protected as required for C floors; or fireproof or incombustible floors on metal supports not protected as required for C floors. (Figs. 2 and 3.)

C. FLOORS. (MILL CONSTRUCTION)

Combustible floors not less than 4 inches thick (3½ inches dressed) with vertical supports of wood not less than 8 x 8 inches and with horizontal supports of wood not less than 6 x 6 inches, or with vertical and horizontal supports of metal protected by not less than 1 inch of plaster on metal lath; or fireproof floors on metal supports protected by not less than 1 inch of plaster on metal lath. (Figs. 2, 3 and 4.)

NOTE: Ceiling, if any, of top story should be graded according to the construction specified for floors, except that a ceiling of wood, wood lath and plaster, etc., may be considered equivalent to a floor grading A. (Plate 12.)

Water-Tight Floors

Floor: Floor should have a pitch of at least 1 inch to each 20 feet.

Waterproofing: Floors should be covered with a layer of 1 inch rock asphalt, or have two layers of felt with a coating of water-proof compound between plies and on top. Wooden overlay should be laid when waterproof compound is hot.

Flashing: Felt should turn up at all posts and at side walls at least 6 inches and be protected by a counter flashing of galvanized iron, or by a wooden base board.

Scuppers: Scuppers should be of an approved type anchored in walls and be spaced not more than 20 feet apart (Plate 13).

(*To be Continued*)

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DONTFEAR

SMOKE and FUME RESPIRATOR

Always Ready for Instant Use

Positive Protection

Against Smoke and Smoke Gases

No Sponge. Price $5. With Airtight Goggles $5.60

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Every Fire and Police Department should have our latest catalog illustrating Braxmar Badges—the recognized standard since 1879—Gold Filled, Silver, Gold Plate, Nickel, etc.

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Write for literature and prices on our 250, 350, 500 and 750-gallon triple combinations, chemical and hose combinations and city service trucks.

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Splashproof Extinguishers — Chemical Tanks — Motorized Equipment

For Every Kind of Fire

"CHILDS" MOTOR FIRE APPARATUS

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The Perfect Satisfaction and economy of wearing the

"FAMOUS KALAMAZOO"

Firemen's Uniforms has been proven by thousands of firemen. Catalog F501 will tell you all about them.

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MAXIM City Service TRUCKS

with Maxim-Built Ladders

are unsurpassed for design, completeness of equipment and sturdiness of construction. Like all Maxim apparatus and equipment, they are built "Just a Little Better All Around."

MAXIM MOTOR COMPANY, Middleboro, Mass.

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New Jaeger Portable Pumper

for Fords

provides adequate fire protection at a fraction of the cost of big apparatus, and is ideal for small towns and communities.

Send for complete details.

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ATTENTION

FACT NO. 2

The "Corey" Fire Hydrant of the improved Rensselaer type is the easiest to operate of any on the market.

ASK

RENSSELAER VALVE CO.

TROY, N. Y.

for prices and details.

How to Select and Care for Fire Equipment

(*Continued from page* 184)

son; a regular system of inspection and operation will probably prove best. An engine should be well worked before putting it into service, for it must be remembered that a fire truck may be called upon for maximum power and speed within a week after installation and regularly thereafter. Driving such a machine is similar to driving a well loaded delivery truck, so drivers must learn the feel of it; because a person can drive a pleasure car does not fit him to drive a fire truck. A speed of 25 miles an hour is ample in smaller towns and reduces the possibility of accident. The care of the engine and driving parts of the truck can best be taken care of by a local garage handling the same make commercial car. Care of fire fighting equipment is up to the fire chief. Care of chemicals is the same for motorized as hand drawn; if the tank is over the hose bed (where it should not be) great caution should be taken not to spill acid on hose. The gasoline tank is better filled at a regular filling station than from a barrel with bucket or can.

Larger towns with 25 or more calls per year should get the best kind of combination car, one which is specially designed and made for fire service only; it will prove economical in the long run and more reliable. With motorized apparatus there should be some kind of reserve equipment, which can be relied upon in an emergency. Any automobile is liable to breakdown or accident and when that happens to a fire truck on the way to a fire it is pretty serious. In towns where one car is normally adequate for protection, hand drawn reserve which can be towed behind pleasure cars serves quite well, especially if water pressure is good.

Where Pumper and Where Chemical is Best

The development of the automobile pumping engine has just about revolutionized fire-fighting in the past ten years. They are made in all sizes and combinations up to 1,000 gallons per minute capacity and only those more commonly found will be taken up. It is safe to say that such a machine is really needed in 95 per cent of the communities which have a water system. Up to the past three or four years the universal opinion was that a triple combination car was about the last word in fire fighting equipment for the small town; a town owning one of them (providing it was small enough to need no more than one company,) was fixed. Experience is showing that this is only partly true. Tying the chemical to the pumping engine prohibits the most effective use of one or the other; this is not serious in itself for only a slight delay is caused by picking up the chemical hose before going from the fire to hydrant to connect the pump. But the congestion of traffic near the fire in even the smallest towns often causes delay and sometimes the car is totally blocked. Several towns have purchased or built a straight chemical car with two tanks to overcome this trouble, and others have installed a combination chemical and hose which also serves as reserve hose carrier.

Arrangements are frequently made with farmers within 3 to 5 miles radius of a town to furnish protection in return for help in buying a truck. This arrangement means that two cars are absolutely necessary and the above combination is a good one in such case; the pumper can respond if roads are good and water in quantity is available; with bad roads or no water the chemical or combination car can be sent. At least two reputable to run at full capacity or even ¾ capacity at only one or two large water tanks—the pressure is created by the regular pump. This has many merits which include lower cost, larger size stream, greater reach and greater capacity of tanks.

The Size of Pump to be Purchased

Machines of this type, however, cost a lot of money and a council or committee must be careful to get the best possible for the amount expended. The first thing to determine is the size of pump which can be used. Few towns under 20,000 population have adequate water supply, and the water distribution system must be studied to learn the maximum and minimum quantities obtainable from hydrants; also how many hydrants can furnish a large amount. More than one case is known where this was not done and when the machine was delivered it was possible to run at full capacity or even ¾ capacity at only one or two spots; elsewhere pipe was too small to deliver much water. The business district will be the scene of the biggest fires and in general the amount of water available from hydrants in this area can be safely used as a guide to the possible pump size. It is not necessary to run a pumper at full capacity to get good streams, but there is nothing gained in buying an oversized one. The most progressive manufacturers are recognizing this and building machines to work at a small fraction of the maximum capacity. Efficiency of fuel used is low, but that feature should be the last item to influence choice of make.

"There is a proper way and several poor ways to raise a ladder, as to do most things. The time to learn the right way is in practice or drill."

Plans to build up the water system in future may permit wise buying of larger pump that can be immediately used.

Without question the very best pumping engine that can be financed should be purchased. The commonly accepted standard for these machines is the Underwriters' Specifications and 12-hour test prescribed by the International Association of Fire Engineers. No machine which has not passed a standard 12-hour test at the rated capacity for which it is sold can be considered reliable; that is, a machine built to the same specifications must have passed this test.

The Three-Hour Acceptance Test

The individual machine should be bought subject to a satisfactory 3-hour Underwriters' Acceptance Test. This test requires that the machine pump water at rated capacity against 120 pounds net pressure for 2 hours, ½ of rated capacity against 250 pounds net pressure for 30 minutes and ⅓ of rated capacity against 250 pounds net pressure for ½ hour. When those demands are studied you can know that very good material and workmanship is needed. A pump should have gages to show suction and discharge pressure, positive acting relief valve, ample return or churn pipe to suction, and lock for pump gear shift levers. While not absolutely essential, a comparatively low speed motor is more reliable than high speed; about 1,500 r.p.m. is the dividing line between low and high speed.

It is common experience that a pumper is seldom used to capacity, and unless regular tests are made it may fail when most needed. A half-hour test on a machine every few months will often uncover a needed repair; defects which have been found include cracked cylinder, clogged cooling system, leaky engine packing, dry pump bearings, defective pump, worn clutch and weak gears.

Knowing the Capacity of the Pumper

All members of a company should understand the principles of pumping. The regular operator should thoroughly know his machine and be able to keep it in first-class condition—this is very necessary in the small town; at least one other man should be able to operate it under any condition. It has been my experience more than once with volunteer departments to find the operator away from town and no one left who understands the pump; also it is very common to find that no member of the department from chief down knows, within 250 gallons, the rated capacity. Judge for yourselves the impression this makes. Many departments are over-confident concerning the performance of a pumper—the machine is considered more or less automatic; all that is required to get any desired result is to connect to the hydrant and throw in the pump clutch. Wonderful things can be done with a pumper, but a pretty good knowledge of pressures, friction in hose and water systems and the effect of nozzle sizes on pressure is essential to satisfactory results. On the other hand, some departments are afraid of their pumper. It is so powerful they do not trust it, and it seems so complicated that something is sure to go wrong if they work it up to capacity. Continued practice under varying conditions is doubtless the best remedy for both conditions, since they are largely mental.

Equipment for handling large streams is desirable, especially deluge sets and cellar pipes.

Ample Ladder Equipment Necessary

Ladder equipment is necessary for two reasons, to save life and to fight fire. A fire department should never lose sight of the fact that they may and probably will be sometime called upon to rescue people from a burning building. For this purpose ladders are indispensable, because if the normal means for getting out of a building were not cut off there would be no need for rescue. People will often climb to the roof of a building to escape heat, so bear that in mind and provide a ladder to reach the highest roof.

For fire fighting, ladders are needed to carry hose and other equipment to upper stories or roof, to get into attics, and to provide footing for nozzlemen with stream directed into a window. In addition to placing ladders, a ladder company should be equipped to open up a building for hosemen to enter, to ventilate a building, assist generally in getting at a fire, and to protect contents from avoidable damage.

In any town with a half-dozen three-story or higher buildings, a ladder company with well equipped truck is necessary for reli-

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Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

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who for over thirty years have specialized in equipment for producing superior fire-fighting streams in all sizes unsurpassed for solidarity, distance and effectiveness, and safely handled under all pressures.

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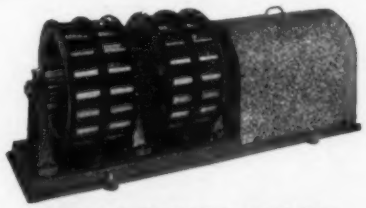

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Manufacturer Fire Dept. Supplies: Automatic Door Spring Outfits and All Kinds of Hydrant Connections.

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Community Fire Fighter is Designed Especially for Small Towns

Fire apparatus for volunteer and small town fire departments must be designed, built and equipped to meet particular requirements. It must be a combination of several distinct types built for city use. It must be complete in every detail.

The Stoughton, the *Original Community Fire Fighter*, is designed to meet these requirements and made in three sizes,—300—350 and 500 gallon capacities. Each model and every piece of apparatus guaranteed to pass the National Board of Fire Underwriters' twelve-hour pumping tests.

May We Send Complete Information?

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STOUGHTON FIRE APPARATUS CO., 280 W. 57th St., New York City, Eastern Representatives

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We attach rocker lug couplings without extra charge, when wanted.

Write Us For Prices

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230 West Randolph Street Chicago, Illinois

able protection. When few buildings exceed three stories a city service truck is satisfactory, but with as many as five buildings higher than this an aerial truck is warranted. Small communities with one or two buildings over two stories can usually carry sufficient ladders on hose cars or install a light ladder truck, depending on local conditions. When no building exceeds two stories a 30-foot extension ladder and one or two scaling ladders are quite satisfactory.

The usual practice is to carry a 24-foot extension ladder on the hose car, but this is only safe when a fully equipped ladder truck is available. For towns with less than five three-story buildings a light truck with 40, 30, and 24 foot extension ladders, two wall and two scaling ladders can be kept in the station and taken only to fires in the business district; this truck can be fitted with tongue or rope and hauled behind an automobile when needed, if a motorized truck cannot be purchased. This is not recommended. In the city department at Ames (Iowa) a service truck with large chemical tank and several hundred feet of hose is used as a combined hose and ladder truck; the need for ladders here is apparent because of congested housing during the school year and the use of attics for sleeping rooms. Such a machine would be well suited to many other towns.

Where a Service Truck is Required

A motorized service truck should of course be provided where a ladder company is needed. With ladders up to 50 foot size, the machine can be driven by rear wheels and steered from the front seat; longer ladders usually mean a tiller or rear steering device. Standard makes of service trucks carry one 50 foot, one 40 foot, and one shorter extension ladder and several straight and scaling ladders. Extension ladders and the longer wall ladders are preferably of the trussed type; that is, the sides or rails are not solid but are built up of light strips so placed as to give strength without unnecessary weight. Wrecking tools make up the general nature of other equipment carried, such as axes, picks, door openers, pike poles and plaster hooks, rope, wire cutters, bars and roof cutter. Waterproof covers, brooms, forks, shovels and mops can be carried and used to great advantage in protecting stocks from undue water and other incidental damage.

Skill Needed in Handling Aerial

The modern aerial ladder truck is mechanically operated or raised, but a trained crew is needed for quick work. Usual reaches are 65, 75 and 85 feet, when fully extended, the ladder being in two or more parts called the bed ladder and the fly. Two drivers are needed in American models because of the length of bed ladder, requiring a tillerman. The front wheels are the drive wheels, some models having a four-wheel tractor in front, partly to simplify steering equipment and to distribute weight. A very compact model has been introduced from Europe, with a several section ladder which permits a much shorter wheelbase; it appears to be an advance so far as handling in traffic is concerned.

The aerial truck is usually and should always be equipped with ladder pipe and nozzle; this is a large size hose fastened to the ladder with the nozzle placed at the upper end of the bed ladder; the direction and elevation of the nozzle can be controlled from the ground by ropes. Such equipment makes it possible to direct a nearly horizontal stream into upper stories, but good pressure is needed for a large stream. A life net and safety belts are carried on an aerial truck in addition to the usual tools. Pompier scaling ladders may be carried and they are excellent for training; their use at fires is spectacular but of doubtful value except in greatest emergency.

Care of the Ladders

The motor and driving parts of ladder equipment should of course be under supervision of a competent mechanic. Ladders themselves need regular attention to check development of weakness. New ladders are coated with a good grade varnish and this should be preserved or renewed as it not only improves the appearance but keeps the grain fibers from loosening and fraying. It also lengthens the life and retards dry rot. Some departments prefer paint to varnish, but paint covers many defects that a clear varnish does not. Ladders should of course be handled carefully to avoid cracking rails or rungs. Wood used in ladders carefully selected and treated to give maximum strength and life; they are not built to use as battering rams to break doors and should be so used only in an emergency. Extension ladders have moving parts which need constant inspection; sheaves should be free running but not loose, rope should lay straight and be sound thruout, and locks should work freely and positively both in raising and lowering the fly. Extension ladders of 35 feet and longer require stay poles to make raising easier and to hold the ladder steady when the fly is in use. These poles must be sound and not warped with strong fastenings is permanently attached to the rail. A ladder truck is built to hold the ladders securely, with quick releasing clamps and enough supports to keep them from sagging and becoming warped. When extension ladders are carried on hose cars similar precautions should be taken. If a ladder overhangs at the end more than four rung spaces or center supports are more than 8 spaces apart the ladder is apt to sag and in time will become sprung or warped; also a longer overhang may cause vibration or whipping during a run. The ladder must be fastened so it will not slide back and forth with changing car speed. A ladder should never be strapped to supports or fastened in like manner; that discourages removal for practice and will surely cause delay and confusion when it is needed.

Most of the truss ladders have a top side and a bottom, in much the same way that a bridge has a top and bottom. In fact a trussed ladder is built on the same principle as a trussed bridge. If set up wrong a ladder may break with heavy load, this being particularly true with extension ladders. It may be well to mark a ladder if it is seldom used, but that would be poor firemanship.

Drills in Handling Ladders

There is a proper way and several poor ways to raise a ladder, as to do most things. The time to learn the right way is in practice or drill. The handling of ladders seems to be one thing that most volunteer departments and many paid departments neglect, when they do have the ladders to use. This is possibly because of the supposed hard work attached or the inherent belief that anyone can raise a ladder. If properly done there is little difficulty in erecting a long extension ladder, but teamwork of the crew is needed. It takes from three to six men to handle an extension, depending on the length, a rough rule to follow being one man for each 8 feet of total length. While it is true that any group of men with ordinary intelligence can get a ladder from the ground into the air; to place it just where needed and so it will bear the greatest possible load requires training. A ladder must be set so that the bottom will not slip, but it cannot be set up too straight or men cannot work on it. It is often necessary to carry hose up ladders, to fasten a hose line to the ladder and occasionally carry a person down the ladder. A safe rule for determining the distance the bottom should be away from the building is this; divide the distance in feet from ground to top of the ladder (that is the point where the top will be) by five and add two; this is the distance in feet.

Get Opinions of Others Before Purchasing

When new apparatus is being purchased it will pay to get the opinion of several other fire departments and experienced fire chiefs, and to get the specifications of the National Board of Fire Underwriters' for a standard of comparison. It is human nature for a salesman to be enthusiastic for his own product, so too much weight should not be given to any one salesman's statements. Above all do not try to get too much for your money.

It is probably not necessary to urge fire chiefs to think of additional apparatus before it is badly needed, but councilmen are prone to delay till the last minute. It is not good policy to wait until fall to start selecting a machine for the following winter; it takes 45 to 90 days to build a machine.

New Pirsch-Kenosha triple combination car recently delivered to the city of Kiel, Wis. The apparatus, which is equipped with double chemical tanks, has passed the Underwriters' test at 500 gallons per minute and has been accepted by the city for its fire department.

Miami, Fla., Apparatus Called Out by Radio—Fire of unknown origin destroyed the Alabam Hotel at Fulford. The only telephone was enveloped by flames. A message was rushed to the announcer at Station WGBU and he made an appeal to the radio fans to call up the fire station at Miami, Fla. In less than seventeen minutes, apparatus responded from Miami, Fla., and Fort Lauderdale.

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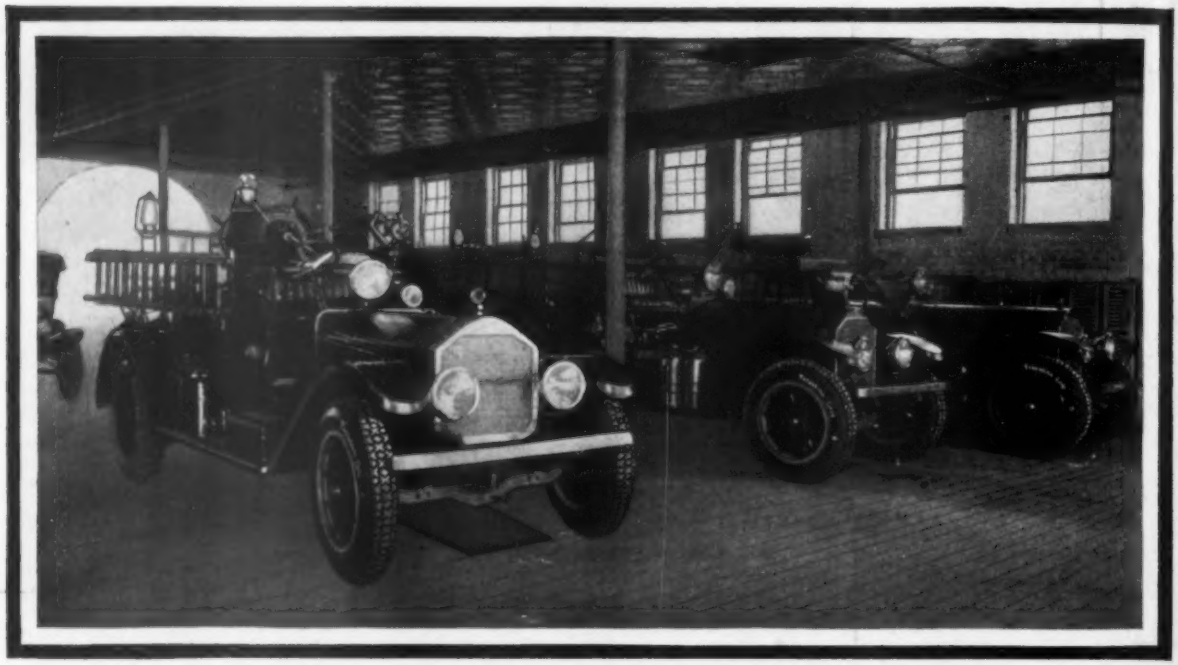

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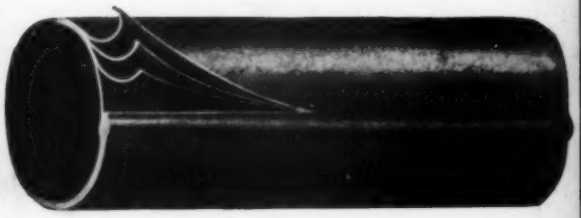

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